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TEACHERS COLLEGE RECORD

The Strategy of Concept Attainment*

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ESSENTIALLY, this discussion is concerned with that part of mathematics teaching loosely classified under the heading "problem solving." That is, attention will be directed toward the area psychologists call the "cognitive domain," which "includes those objectives which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills."[1] The reference cited classifies such objectives under six major headings: knowledge, comprehension, application, analysis, synthesis, and evaluation. We shall not stop to analyze these headings, although they are, indeed, objectives each mathematics teacher desires to make a contribution to.

So, we are interested in the cognitive domain. By what teaching methods can we develop a student's ability in this area? A careful analysis, in the context of mathematics, of the "strategy of concept attainment" may indicate helpful methodology. This brings us face to face with the subject, but before we plunge into it, we ought to be sure what we mean by *strategy*, *concept*, *concept formation*, and *concept attainment*. Only then will it be meaningful to put them all together and talk about the whole subject, *strategies of concept attainment*.

A concept is "a way of grouping an array of objects or events in terms of those characteristics that distinguish this array from other objects or events in the universe."[2] Consider, for example, the set of all natural numbers:

$$\{1,2,3,4 \ldots, n, n+1, \ldots\}.$$

* *Logic in Elementary Mathematics*, by Myron F. Rosskopf and Robert M. Exner, will be published early next year by McGraw-Hill. On a Fulbright Award, Dr. Rosskopf will spend 1958-59 at the Pedagogisk Institut, Oslo, Norway. He will lecture on "The Teaching of Mathematics in the United States."

[1] Benjamin S. Bloom, editor, *Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook I: Cognitive Domain* (New York: Longmans, Green and Co., 1956), p. 7.

[2] Jerome S. Bruner, Jacqueline J. Goodnow, and George A. Austin, *A Study of Thinking* (New York: John Wiley and Sons, 1956), p. 275.

Certain subsets of this set are discriminable. There is the set of even natural numbers,

$$\{2,4,6,8, \ldots, 2n, \ldots\};$$

the set of odd natural numbers,

$$\{1,3,5,7, \ldots, 2n + 1, \ldots\};$$

the set of prime (natural) numbers,

$$\{2,3,5,7,11,13, \ldots\}.$$

When a student can distinguish between prime numbers and numbers that are not prime, then he has a concept of prime numbers. He has grouped the array of objects, the natural numbers, so that he can tell the difference between a prime number and a natural number that is not prime. He has used the characteristics that distinguish between prime numbers and other members of the set of natural numbers. Really, the student has formed two *categories* of natural numbers, those that are prime and those that are not prime.

But we recognize more in a concept than just the forming of categories according to some discriminating characteristic or characteristics. Part of the concept of prime numbers would be a realization that their number is infinite, that no one has devised a formula for prime numbers, that there is just one even prime, and so on. In short, it appears that we are willing to accept as part of a concept the inferences drawn from the category we have been able to devise. A working definition of a concept might be "the network of inferences that are or may be set into play by an act of categorization."[3]

Very little will be said here about concept formation because so little is known about it. To return to the set of natural numbers as an example, one would say a child was forming a concept when he wondered, "Are there some (natural) numbers that are different from others?" The difficulty inherent in investigating such a question is obvious. The answer lies so far back in childhood that an adult cannot even recall formulating the question. He recalls only the fact of concept attainment—certain numbers are different from others; there are categories into which they can be put; and there are good tests for determining which number to put in this category or that.

There is much talk currently about a concept of a *set*. The formation of this concept is only a dim memory for adults. It lies in the neighborhood of the realization that objects might be considered to have some common property, however arbitrary or abstract that property may be.

CATEGORIZING OR CONCEPTUALIZING

Only a very small child reacts to numbers as individual objects. Moreover, the reaction is quite specific. There are two eyes, two ears, two shoes. It is a proud day for parents when their child attains a concept of twoness. Behavioral evidence comes when the child holds up or points to a set of two objects and says, "Two." But it is only the *attainment* of the concept the parents observe; formation of it is hidden in the sub-verbal realm. This is the difficulty with research on concept formation. How can this sub-verbal realm be brought to the verbal stage or, at the very least, to some external, observable behavior?

The child learns to call any set that has two objects in it by the name "two." In a way, he forms an equivalence class of all sets that can be put into one-to-one correspondence with some fundamental set of two members. Conceptualization,

[3] *Ibid.*, p. 244.

then, is really the process of forming these equivalence classes of things that look different but have some property in common.

Notice that the learning in the example started with objects, the concrete or functional if you please, and proceeded to the abstract or formal categorization. Such a pattern seems typical of learning in mathematics. Mathematics has strong empirical roots which should not be forgotten or neglected in our teaching. In short, it is possible to be too abstract too early in a child's mathematical career.

Take as an example the concept of a rational number. This starts very early in the home experiences of the preschool child. One-half and one-fourth are known for names of parts of things: one-half of an apple or an orange or a bottle of soda or a candy bar. During the first and second grades the concept is expanded to include other objects and the written symbols for one-half and one-fourth: ½ and ¼; ⅓ is added to the list. The concept is still on the level of these symbols being names of parts of things. There seems little evidence that a child thinks of ½,¼,⅓ as exemplars of a new sort of number. The work in elementary school arithmetic does call the fractions "numbers," of course, but still the concept, the way of categorizing these numbers, of telling how they differ from whole numbers, is in terms of a way of expressing them; to wit, a numerator, a horizontal line, and a denominator. Not until quite late does the teaching reach the stage of giving a new name, rational numbers, to the class of numbers that can be expressed as the quotient of two integers, the denominator not zero. Now the concept has become formal, and it will be even more so when the student recognizes rational numbers as ordered pairs of integers in which the second member is not zero.

Notice that at each stage there are cues that a student looks for: parts of things; a numerator, horizontal line, and denominator; a quotient of two integers; an ordered pair of integers. These cues help a student put a number he encounters into its proper category, to align it with the concept he has formed. Notice, also, that the example involves the invention of ways of grouping predictive characteristics. The test of the invention is its usefulness. Does it effectively categorize numbers? The answer is "Yes," until a student thinks to ask, "Are there other numbers?"

Categorizing is based upon defining attributes. By grouping together things that satisfy the defining attributes or characteristics of a class, an individual (*a*) reduces the complexity of his environment; (*b*) identifies the objects in the world; (*c*) reduces the necessity of constant learning; (*d*) gives direction to activity; (*e*) orders and relates classes.[4]

Are there any implications here for problem solving in algebra? If a student does not use cues to classify problems he meets, then he must treat each problem as an individual. The cognitive strain in such a procedure is enormous. The student must, perforce, for purposes of economy of effort look for distinguishing characteristics or discriminable attributes of problems in order to reduce the strain. That is, he must use cues, put the problem in a pre-decided-upon category, and try a method that has worked in the past to solve problems in that category.

In short, it was not so bad to have taught students to look for cues in problem solving, but it was bad to have led them to believe that this was *the* way to

[4] Bruner and others, *op. cit.*, p. 12.

solve all probems. It was also bad to make problems in textbooks all of the same type, so that a student did not have to exercise discrimination in looking for cues more than once. It would seem that a categorization of a problem as distance-rate-time, mixture, number, work, or geometric is the first step toward its solution. It is only after the problem has been put in a certain category that one can go ahead with plans for solving it.

Of course the first plan may fail. If it does, we have to devise variations on the first plan. Perhaps we failed to discriminate carefully enough when we categorized the problem. Consider the following problem:

> From a two-digit number, N, subtract the number whose digits are those of N interchanged. If the difference is a positive perfect cube, how many permissible values of N are there?

A first classification of this problem is that it belongs in the category of number problems. All right; we have standard methods for solving such problems. Let us apply them:

$N = 10t + u,$
$(10t + u) - (10u + t) = 9(t - u) =$ a positive perfect cube.

But we are stopped now. Our standard methods fail; and we must *realize* that they fail and search for some new method. We must shift our plans, and this requires strategy.

STRATEGY

A strategy is a carefully planned calculation and coordination of the specific ends and means necessary to achieve a goal. That is, "a strategy refers to a pattern of decisions in the acquisition, retention, and utilization of information that serves to meet certain objectives, i.e., to insure certain forms of outcome and to insure against certain others. Among the objectives of a strategy are the following:

(*a*) To insure that the concept will be attained after the minimum number of encounters with relevant instances.
(*b*) To insure that a concept will be attained with certainty, regardless of the number of instances one must test en route to attainment.
(*c*) To minimize the amount of strain on inference and memory capacity while at the same time insuring that a concept will be attained.
(*d*) To minimize the number of wrong categorizations prior to attaining the concept."[5]

The foregoing usage is analogous to but slightly different from the meaning given to strategy in the theory of games. In the latter a strategy is a complete set of decisions; no change is allowed in any one game once a strategy, a set of decisions, has been decided upon. In the case of concept formation too a strategy is a set of decisions, but these decisions can change as the individual forms a new definition of his goals or decides upon a different categorization of the problem or becomes subject to pressures. However, experiment indicates that many individuals have a tendency to decide beforehand upon a strategy that has worked well in other problem situations and to continue to use the strategy in spite of repeated failure.[6]

There are several immediate implications for teaching mathematics. First, there is the matter of the definition of the task to be done *as the student sees it*. Does he see the task as part of a bigger learning situation? Or does he see the job

[5] *Ibid.*, p. 54.
[6] *Ibid.*, p. 58.

as one of getting an answer, a number? Does he see the job as stringing together a sequence of statements to call a proof? Or does he see it as achievement of a structure held together with the glue of logic? Involved here is a question of motivation as well as one of both textbook and teacher being crystal clear in directions.

A second implication for teaching is related to the matter of categorizing a problem, deciding upon a strategy, and clinging to the strategy in spite of its ineffectiveness.

Let us return to the problem presented earlier. It was used on a mid-semester examination in a course whose title is Teaching of Algebra and was intended to underscore some features of problem solving that had been discussed in class. As the writer read the solutions of this particular problem on the test papers, he observed many types of strategies being used in efforts to solve it. Almost everyone categorized the problem as a number problem, and immediately wrote an expression for a two-digit number. So far, so good. Those whose bent was to write equations—a strategy that in their experience worked well to solve number problems—were frustrated in their efforts. Their papers showed numerous scribblings, tag ends of ideas that might work. As the time pressure increased, the scribblings indicated frantic efforts to achieve an equation, or a set of equations, that would be solved by tried-and-true methods.

Then there were those who realized that a shift in strategy was necessary. Their papers showed fewer scribblings, fewer equations or efforts aimed at achieving equations, but they were caught in their conception of the definition of a mathematical solution. Clearly, their work indicated that they rejected as mathematical a solution arrived at by guess or introspection or intuition. If the solution could not be arrived at by manipulating an equation, then (in this case, at least) it was not acceptable. We see here how important the mind-set is; a definition of an acceptable problem solution that is too restrictive can interfere with achieving a solution of the problem.

The successful group not only realized a necessity for a shift in strategy but also had a broader conception of what constitutes acceptable methods of solution of a problem. A variety of strategies were used by these people. Some of them were very elegant; others were straightforward testing of cases.

What observations can be made? One is that we must be careful to teach so that our students will acquire a broad conception of methods that are mathematical. Their definitions of solution cannot be narrow. A second observation is that we should like our students to be *flexible* in their strategies—willing to adopt another plan if the first one fails or does not appear promising. If the pressure is great, we want them to gamble on achieving a solution.

EXAMPLES OF STRATEGIES

"Virtually all the effective strategies for attaining concepts depend upon the use of some sort of initial focus."[7] Suppose we write the following equalities:

$$6 = 3 + 3 \qquad 14 = 11 + 3$$
$$8 = 5 + 3 \qquad 16 = 13 + 3$$
$$10 = 7 + 3 \qquad 18 = 13 + 5$$
$$12 = 7 + 5 \qquad 20 = 17 + 3$$

What do you see initially? Is it the even numbers or the odd prime numbers? Can you state a conjecture, a tentative conclusion? Does it look as if an even number can be expressed as the sum of two odd primes? But wait a moment; how

[7] Bruner and others, *op. cit.*, p. 63.

about 4 or 2? Then modify your conjecture:

An even number greater than 4 can be expressed as the sum of two odd primes.

This is Goldbach's Conjecture—and still is open to proof or disproof. Do you see the role that your initial focus played in arriving at this conjecture? If so, then the illustration has achieved its purpose of illuminating the quotation with which the section begins.

After the initial focus with respect to a problem is clear to a student, he faces the difficulty of deciding upon procedures for finding out something about the problem, even its solution. In the psychological research study that is the principal basis for this discussion, four "ideal" strategies are described: simultaneous scanning, successive scanning, conservative focusing, and focus gambling.[8] Let us illustrate each of these by appealing to an "ideal" student and a mathematical problem. A problem from geometry will serve:

Find, on a straight line, a point such that the sum of its distances from two given points is the least possible. Distinguish two cases, one in which the two points are on the same side of the straight line and the other in which they are on the opposite sides.

Our ideal student will understand the problem and be able to draw two pictures to illustrate the two cases. Now he must make a choice of strategy.

Simultaneous scanning. The simultaneous scanner forms many hypotheses possible to follow to a solution—use congruent triangles, perpendicular lines, auxiliary lines, measurement, previously proved theorem concerning isosceles triangles, axioms—and keeps all of these hypotheses in mind. The strain on memory is great. Initially he chooses one of these paths and examines it to see if it is promising *and* to see which of the other hypotheses it eliminates. He has to keep all the hypotheses in mind; he has to deduce which are eliminated; and as he goes to test a remaining hypothesis, he must remember which hypotheses have been eliminated by his former testing.

The advantage of simultaneous scanning hinges on the student's ability to deduce all the information with respect to which hypotheses should be discarded from the testing of an initial hypothesis. Then he can proceed with a maximum amount of information to test a remaining hypothesis. However, the memory strain and a time factor usually prevent him from obtaining maximum information. Moreover, he has no control over the risk involved in making a bad deduction. He cannot himself either increase or decrease the risk. There is little to recommend this strategy.

Successive scanning. Mathematics teachers often use this strategy, particularly in geometry when working with slow students. Essentially, the strategy consists of testing a single hypothesis at a time. Can congruent triangles be used? No, for no information concerning minimum distances can be obtained from congruent triangles. Can perpendicular lines be used? Some information concerning minimum distances can be obtained from perpendicular lines, for the shortest distance from a point to a line is measured along the perpendicular. But then we would have two shortest distances to two (in general) distinct points on the given straight line. The hypothesis must be discarded. And so on, until each hypothesis has been tested, independently of the others, and a correct hypothesis found.

The gain in use of successive scanning is in two areas, the lightening of memory

[8] *Ibid.*, pp. 83-90.

load and the relief from the necessity for many inferences. Another advantage is that each hypothesis can be subjected to direct test. Two disadvantages are that some of the hypotheses may be redundant, and that there is no control over risk. A student cannot take greater gambles or lesser gambles. Of course sufficent time, in a way unlimited time, must be available to a student so that he can feel secure in using the rather leisurely strategy of successive scanning.

Conservative focusing. A problem solver in mathematics who uses conservative focusing as a strategy first of all studies the problem to see if there is one key idea. If there is, this is seized upon and all hypotheses are tested against it. In our geometry problem there is such a key idea. It is that the "sum of its (the point to be found) distances from two given points is the least possible." Now what do we know about least distances? Two things: (*a*) the shortest distance between a point and a line is measured along the perpendicular and (*b*) the shortest distance between two points is a straight line.

The latter fact solves immediately the case of the problem in which the two given points are on opposite sides of the given straight line. The question is, Can we use the same fact to solve the other case, in which the points are on the same side of the straight line? Here, a problem solver would see which of his hypotheses, the geometrical methods that he has categorized at this stage, involve somehow the idea of the axiom he is using as a focus. One by one he adds parts of these hypotheses to the shortest distance between two points fact and tests the result. The "conservative" comes into the description of this strategy just at this point. Only one feature of a hypothesis is added at a time and tested.

Clearly, a great deal of information is obtained by this strategy and redundances are avoided. The risk of getting no information is under control. In fact one always gets some useful information from a test. The only real disadvantage is that material which is not arranged in orderly fashion might necessitate a long search for what the problem solver needs. Hence part of the success with which he uses conservative focusing will depend upon orderly arrangement of his mathematical knowledge.

Focus gambling. A problem solver who uses this strategy begins in the same way as the one who uses conservative focusing. But instead of using one feature of a hypothesis at a time and adding it to his focus, he gambles on using two or more. The strategy is not quite an all-or-nothing procedure, but it is very close to it in case the omnibus hypothesis fails to solve the problem. The only way in which the problem solver can gain information from such a negative instance is to shift strategies and revert to successive scanning. However, the gamble *may* pay off; the hypothesis being tested may, indeed, solve the problem. Then there is much gain; the number of trials has been reduced to a minimum; much time has been saved.

SUMMARY

In order to conserve energy and relieve cognitive strain, human beings tend to deal with classes of things rather than with individuals. In forming these classes or categories a person looks for cues or characteristics that serve to distinguish things eligible for the category from those which are not eligible. These categories are inventions, like the set of positive even numbers or the set of integers exactly divisible by 3 or the set of prime numbers.

To solve a mathematical problem, then, we categorize it by looking for features that we have learned are characteristic of problems of a certain type. Then we test this categorization by means of certain hypotheses, methods of solution that we have associated with this category of problems. A decision on these hypotheses serves to validate our categorization. "The sequence of decisions made by a person en route to attaining a concept . . . may be regarded as a *strategy* embodying certain *objectives*. These objectives may be various in kind, but in general one may distinguish three kinds of objectives: (*a*) to maximize the information gained from each decision and test of an instance; (*b*) to keep the cognitive strain involved in the task within manageable or appropriate limits and certainly within the limits imposed by one's cognitive capacity; and (*c*) to regulate the risk of failing to attain the concept within a specifiable time or energy limit. . . ."[9]

We have seen there are two strategies, successive scanning and conservative focusing, that have application in mathematical problem solving when time is not of the essence. If a student has leisure; that is, time to test each hypothesis individually, then he can use successive scanning as a strategy. By making a preliminary analysis of the problem and choosing a hypothesis as a focus he can do his testing more efficiently. If, however, time harasses the student or there is danger of losing the payoff—which might be a passing grade on a test—then he should switch to focus gambling as a strategy. The information obtained may be all or none, but time, and the payoff, will be saved in case the strategy results in success.

One last point is that the strategy used by a student does not have to be conscious, nor does he have to be able to verbalize the strategy. What seems most important is that teachers be cognizant of the various strategies psychologists have found used in concept attainment. Thus equipped they can direct their teaching and their selections of problems toward making students better and more efficient problem solvers.

[9] Bruner and others, *op. cit.*, p. 234.

What Education Has to Learn from Psychology*

VI. Emotion and Learning

PERCIVAL M. SYMONDS

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EDUCATION seems to be permeated by issues about which there are intense differences of opinion. One of these issues is whether education is helped or hindered by the presence of emotion in the learning process.

On the one hand there is the point of view that emotion is a disturbing factor in learning; that education proceeds best in a state of tranquillity and avoidance of excitement or stress. The educational ideal is a retreat from the heat and passions of the world to a place where contemplation and meditation can permit learning to proceed without the distortions of strong emotion. Education can best take place in the emotionally sterile atmosphere of the library, the laboratory, or the classroom. In the Middle Ages practically all learning and scholarship were concentrated in monasteries far removed from the strife of the world where leisure, calmness, and security prevailed.

The harmful effects of emotion on learning are often pointed out. Interference with school progress is found in the emotionally disturbed child. His emotions prevent him from giving attention to his learning tasks and throw him into turmoil and confusion. A state of anxiety, rivalry, or anger can interfere with successful school achievement. McKeachie has said, "Anxiety is a major factor in the college student's classroom performance."[1]

But on the other hand there is the point of view that learning is in essence a tremendously exciting process; that any genuine learning must not be solely a sterile intellectual exercise, but should be a complete experience—which of course includes the emotions. Learning involves the excitement and anticipation of starting something new, the struggles, hopes, and doubts that accompany the process, the final feeling of triumph at the successful completion of one's task or the feeling of gloom and discouragement that accompanies failure. Even the simplest act of learning, it is claimed, involves all of the steps that constitute

* This is the sixth article in a series by Professor Symonds on this subject. The first (Motivation) appeared in the February 1955 Teachers College Record; the second (Reward) in the October 1955 issue; the third (Punishment) in April 1956; the fourth (Whole versus Part Learning) in March 1957; and the fifth (Learning Is Reacting) in November 1957.

[1] W. J. McKeachie, "Anxiety in the College Classroom," *Journal of Educational Research*, 45:153-60, 1951.

a literary production. There are the introduction, rising action, the climax followed by falling action, and a conclusion. A little child learning to put a button through a buttonhole goes through these stages. He accepts the challenge of the problem, struggles with it, and strives for success while facing the possibility of failure. Finally there is the feeling of triumph—I have done it! The schoolboy goes through these same emotional stages in solving a geometry original, and so undoubtedly did Einstein in deriving his famous formula connecting mass, energy, and motion.

So it is claimed that genuine learning must be accompanied by emotion and sometimes *strong* emotion. There is curiosity and the passion to know, there is anxiety and doubt, there is stress and struggle, perhaps there is discouragement and despair, and finally there is the thrill and excitement of success.

Which of these two points of view is correct? What can we learn from psychology that will help to resolve this dilemma?

Although psychologists have recognized this alternative for a long time, it is only within recent years that psychology has provided definitive information on this issue. Meumann stated almost a half century ago that unpleasantness has a deleterious effect on memory and that all emotions impair memory if they exceed a moderate degree.[2] He added that it is important for children to believe that they are able to do the work assigned.[3] But Meumann based these remarks on his general observations and not on controlled experiment. Pyle, another early educational psychologist, wrote, "Any intense emotion of whatever kind is unfavorable to learning,"[4] but Pyle did not produce experimental evidence either.

Thorndike likewise recognized that emotion has an effect on learning, but he candidly admitted that the conflict between different theories "awaits experimental decision." From his informal observations he notes:

> There is a conflict of theories and of practices with regard to the value of emotional fervor in learning. In the case of intellectual functions, the balance of opinion is that, apart from the eager but quiet zest for the work itself and for success in it, all emotional excitement is disturbing—that not only violent love, grief, humiliation and disgust, but also moderate fear of onlookers, exultation at success, and anger at competitors or at oneself, are to some extent wastes of energy and preventives of improvement. In the case of moral functions, such as learning to work energetically, or to tell the truth, or to be just to pupils or employers, the balance of opinion is rather toward the view that appropriate emotional fervor provides a reinforcement. . . . In the case of improvement in skill, the balance tends again toward freedom from all the crude emotional states, and even from all the finer excitements, save the intrinsic satisfyingness of success and the firm repudiation of errors which can hardly be called exciting.
>
> Those who achieve most and advance most rapidly, whether in mathematics, science, music, painting, self-control or devotion, are, on the average, characterized by less inner turbulence at their work than those of low performance and slow progress.[5]

Since these early writers expressed their beliefs, psychologists have put many of these issues to experimental test. What are some of the results from

[2] Ernst Meumann, *The Psychology of Learning* (New York, D. Appleton and Company, 1913), p. 281.

[3] Meumann, *op. cit.*, p. 248.

[4] H. E. Pyle, *The Psychology of Learning* (Baltimore, Warwick and York, 1921), p. 73.

[5] E. L. Thorndike, *The Psychology of Learning*, being Vol. II of *Educational Psychology* (New York, Bureau of Publications, Teachers College, Columbia University, 1913), pp. 226, 227, 228.

current experimental studies of the influence of emotion on learning?

Actually an experimental study made by Yerkes and Dodson in 1907 reports one of the most important principles of the effect of anxiety on learning and should have been available to Thorndike and Pyle, but it appeared in a medical journal with which psychologists in general were not familiar.[6] Perhaps one obstacle to Yerkes' and Dodson's finding becoming more immediately known was its cryptic phrasing: "As the difficultness of discrimination is increased, the strength of that (punitive) stimulus which is most favorable to habit-formation approaches the threshold." Interpreted, this means that mild degrees of punishment facilitate the performance of an easy task, whereas excessive amounts disrupt the solution of more difficult problems. (It should be remembered that Yerkes was the first to use punishment as a stimulus in animal experimentation.[7]) This finding also is not wholly satisfactory because it combines two variables—the strength of the punishment (and the anxiety that the punishment evokes) and the difficulty of the task. These two sets of influences were separated in later studies.

SOME DEFINITIONS

A few definitions are in order here, so that the reader will have a clear understanding of the terms used, and a theoretical orientation of the concepts which underlie contemporary research in this area.

The most basic concept is *frustration*, which may be defined as interference with the satisfaction of some need. The word *thwarting* is a synonym for frustration. Frustration may result from deprivation. One important type of frustration is *failure*, which means that one has not succeeded in reaching some goal that he has set for himself. The goal or aspiration in this instance is the need that falls short of being satisfied.

Another form of distress in addition to frustration, or failure to achieve the satisfaction of some need or to achieve some goal, is *harm* or *danger* that may strike or threaten from without. *Punishment*, defined as something that *hurts* or causes *pain*, inflicted by one person on another, is a prime example of *harm* or the *threat* of harm. One readily recognizes that parents and teachers frequently use frustration or the threat of frustration as well as the direct infliction of pain as a punishment.

Anxiety is the emotional reaction that is aroused by some anticipated frustration or punishment. Anxiety is a most uncomfortable state and something that an individual avoids.

Continuous frustration or continuous threat of frustration or punishment gives rise to a state of *tension*. Under tension the unfulfilled needs induce an uncomfortable state of suspension, and muscular tension, apparent in posture, results from preliminary but incompleted attempts at adjustment in order to satisfy the aroused need. Tension always accompanies anxiety.

One other term, *stress*, has come into psychological usage in recent years. Stress refers to a condition, situation, or stimulus that arouses anxiety and produces tension.

EXPERIMENTAL FINDINGS

An important experimental finding with regard to emotion, especially anx-

[6] R. M. Yerkes and J. D. Dodson, "The Relative Strength of Stimulus to Rapidity of Habit Formation," *Journal of Comparative Neurology and Psychology*, 10:459, 1908.

[7] R. M. Yerkes, *The Dancing Mouse* (New York, The Macmillan Company, 1907).

iety, is that it acts as an energizer. One of the first to demonstrate this was McKinney, who had his subjects attempt tasks under timed conditions such that at the end of each minute an automatic clock would buzz. To be sure, this did not arouse profound emotion, but it was sufficient to cause his subjects to speed up. McKinney comments, "As long as the emotion is just a mild but persistent stimulus, it may act as a director or energizing force for ideational activity."[8] McKinney's results did not command much attention, inasmuch as he added, "As soon as an emotion becomes so strong that impulsive behavior is unavoidable, it retards rather than directs activity." But the energizing influence of emotion has been demonstrated many times in subsequent experimental work and is of great significance. Franz Alexander has said that the struggle against frustrating conditions is an essential part of life.[9] In fact, mild anxiety is one of the prime human motivations, and a state of mild anxiety and frustration is essential for all effective learning. It was Neal Miller who said, "Completely self-satisfied people are poor learners."[10] A person learns only when he has an unsatisfied need that can be met only by learning, and an unsatisfied need is accompanied by a modicum of anxiety.

Anxiety, then, can be called a motivating influence if it is present in mild form. This raises the question of the place of "negative incentives" to learning. Some teachers are great believers in the negative incentive—the do-this-or-else approach. Forcing a child to learn by threat of punishment is a negative approach. It makes learning an evil, and the choice of learning instead of punishment the lesser of two evils. But learning should be a positive thing, a reaching out for that which is desired rather than a retreat into the frying pan so as to avoid the fire.

A little child will be fascinated by what alarms him slightly—the red fire engine, the wild animal, the ghost story—and will want to experience it over and over again in play so that he can master the anxiety. Valentine claimed that children will "play out fears," even to the extent of screams and tears.[11] Risk-taking accompanies all great endeavors. Every game, every contest involves risk because the outcome is not known until the final whistle blows. Climbing a mountain, playing a game of chess, betting on a horse involve uncertainty, taking risks, tension, and anxiety. A puzzle involves a person in uncertainty, doubts, and struggle until the key to the puzzle is found. Children find pleasure in the dangerous situation—riding on the roller coaster, setting off fire crackers, skating on thin ice, walking on a narrow bridge over a gorge—providing the danger is surmountable and not disastrous.

One may well ask whether a teacher should create frustrations or arouse anxiety. The answer is that real learning situations hold sufficient frustration and anxiety—it should not be necessary to create them artificially and extraneously. Frustration should be surmountable by learning; anxiety should be reducible by learning. If the problem cannot be solved, then the anxiety may persist or

[8] Fred McKinney, "Emotional Factors in Learning," *Journal of General Psychology*, 9: 101-16, 1933.

[9] Franz Alexander, "A World Without Psychic Frustration," *American Journal of Sociology*, 49:465-69, 1944.

[10] N. E. Miller and John Dollard, *Social Learning and Imitation* (New Haven, Yale *University Press*, 1941), p. 21.

[11] C. W. Valentine, "The Innate Basis of Fear," *Journal of Genetic Psychology*, 37:394-419, 1930.

it may have to be reduced by some subterfuge or defense mechanism such as rationalization.

Berlyne, a British psychologist, has pointed out that we respond to the strange and unfamiliar with anxiety which we call curiosity, and that there is always an element of anxiety in curiosity.[12] According to this psychologist an organism will learn to respond to a curiosity-arousing stimulus with activity which will increase stimulation. A child tends to approach, examine, and explore that with which he is not familiar. That is, a child has an urge to poke the dormant lizard, or to take a watch apart to see what makes it go. But as the curiosity-arousing stimulus continues to affect an organism's receptors, curiosity and exploration will diminish because familiarity discourages exploration. Curiosity is recognized by teachers as an important condition for learning, and anxiety is the dynamic mainspring inherent in curiosity.

Curiosity can turn from approach to terror and withdrawal if the stimulus becomes too intense and if the situation becomes too threatening with the possibility that it may become unmanageable. During a walking trip in the Cotswolds in England many years ago, my wife and I found ourselves face to face with thirty or forty piglets in a farmyard. We stopped and the little pigs advanced toward us cautiously, with curiosity. I must have made a slight movement, because in an instant every pig turned and fled.

The dividing line between the anxiety present in curiosity which encourages approach and the anxiety which repels and gives rise to retreat and panic is thin, and one may turn into the other with dramatic suddenness. What was a favorable condition for learning may in a twinkling be lost. If the intensity of stimulation of the unfamiliar object increases—a dog's loud bark, the sudden movement of a mechanical toy—the child's curiosity is turned into panic. This same outcome can be produced if other elements of the situation are unpleasant and anxiety-arousing—a teacher's sharp scolding, nagging, insistence on caution or restraint, failure or humiliation. Curiosity is normal with young children, but somehow our schools manage to extinguish this spark. Teachers should become aware of what they do that transforms curiosity and exploratory behavior into hands-behind-the-back, do-not-touch behavior, and should use every caution to prevent the precious condition of curiosity from being destroyed by anxiety that at the moment may be overwhelming.

There is disagreement in the results of studies over the years of the influence of emotion on learning. Some studies have demonstrated that emotion actually improves performance. Taylor found that anxious persons learn a conditioned eyelid response more rapidly than unanxious persons,[13] while Gaier found that persons with high anxiety were more successful in rote learning.[14]

But most of the studies demonstrate, agreeing with Yerkes' original report, that anxiety has a detrimental influence on learning. Lefford showed that it interferes with syllogistic reasoning.[15] Tay-

[12] D. E. Berlyne, "Novelty and Curiosity as Determinants of Exploratory Behavior," *British Journal of Psychology*, 41:68-80, 1950.

[13] J. A. Taylor, "The Relationship of Anxiety to the Conditioned Eyelid Response," *Journal of Experimental Psychology*, 41:81-92, 1951.

[14] E. L. Gaier, "Selected Personality Variables and the Learning Process," *Psychological Monographs*, 66:17, Whole No. 349, 1952.

[15] A. Lefford, "The Influence of Emotional Subject Matter on Logical Reasoning," *Journal of General Psychology*, 34:127-51, 1946.

lor and Spence showed that high anxiety resulted in lower performance on serial learning.[16] Beam demonstrated that serial learning is impaired by the anxiety that is aroused by stress in a real life situation.[17] Gaier, in the study already referred to, showed that high anxiety was negatively correlated with tasks involving analysis of familiar materials, with comparison of familiar with unfamiliar materials, with critical evaluation of new materials, with treatment of concepts or problems dissimilar to those previously studied, and with problems requiring new modes of attack.[18] Ausubel, Schiff, and Goldman also showed that high anxiety subjects are less successful in problem solving.[19] Taylor and Chapman found that anxiety interfered with paired-associate learning.[20]

Can these discrepant results be reconciled? An analysis and comparison of the learning tasks in these several studies reveal that those tasks that show a higher performance under stress are relatively simple—eyelid conditioning, rote memory—whereas the task on which anxious subjects do less well are more complicated and difficult. The distinguishing factor seems to be "response competition." If responses do not have to compete with other responses, apparently subjects are aided by the energizing effect of emotion; but when there are response competition, conflict of responses, and choice, then anxiety interferes with learning. This is particularly clear in those situations where an avoidance response (which almost of necessity assumes the presence of anxiety) has to compete with responses appropriate to the task.[21] The more complicated and difficult the problem, the more will anxiety interfere with performance. Gaier found, for instance, that rigidity (which is a product of anxiety) correlated most highly negative (-.71) with the solution of problems requiring new modes of attack.

One can infer from this that conditions within a classroom that induce mild anxiety will have the least negative effect or even a positive effect on rote learning, but these conditions will interfere increasingly with problem solving, reflective thinking, and creativeness. If we want to teach pupils to think, then it is essential that anxiety be eliminated from the learning situation.

How does anxiety interfere with learning? On a simple level the very energizing influence of anxiety causes difficulty. Because speed of reaction is increased when choices have to be made, *errors* occur, as Montague has clearly demonstrated.[22] This is in part due to less adequate discrimination when a person is under stress and anxiety is aroused. As Hilgard, Jones and Kaplan demonstrated,[23] the learner becomes confused when a choice and decision have to be

[16] J. A. Taylor and K. W. Spence, "The Relationship of Anxiety Level to Performance in Serial Learning," *Journal of Experimental Psychology*, 44:61-64, 1952.

[17] J. C. Beam, "Serial Learning and Conditioning Under Real Life Stress," *Journal of Abnormal and Social Psychology*, 51:543-51, 1955.

[18] Gaier, *op. cit.*

[19] D. P. Ausubel, H. M. Schiff, and Martin Goldman, "Qualitative Aspects in the Learning Process Associated with Anxiety," *Journal of Abnormal and Social Psychology*, 48:537-47, 1953.

[20] J. A. Taylor and J. P. Chapman, "Paired-Associate Learning as Related to Anxiety," *American Journal of Psychology*, 68:671, 1955.

[21] John Dollard and N. E. Miller, *Personality and Psychotherapy* (New York, McGraw-Hill Publishing Company, 1950), p. 360.

[22] E. K. Montague, "The Role of Anxiety in Serial Rote Learning," *Journal of Experimental Psychology*, 45:91-96, 1953.

[23] E. R. Hilgard, L. V. Jones, and S. J. Kaplan, "Conditioned Discrimination as Related to

made. Anxiety, as is well known, tends to deflect attention from the task at hand to the anxiety-provoking stimulus which is an important factor in the loss of discrimination.[24] If a child is disturbed and anxious because of quarrels and threats at home, rivalry with a classmate, or difficulty with his teacher, his attention will be deflected from the subject matter of class instruction to those anxiety-arousing incidents, and learning will be interfered with. For instance, Gaier reports that "the higher the anxiety readiness, the more the individual will attend to objects in his environment rather than to the subject matter itself," and "thoughts about the self increase as the individual's oppositional tendencies increase, and these thoughts tend to grow more self-critical as negativism grows more intense. . . . The thinking is mostly about the individual's personal and intellectual adequacy (or inadequacy) related to the other class members."[25] From a study of student anxiety aroused by negative attitudes on the part of the teacher, Flanders concluded that "student behavior associated with interpersonal anxiety (resulting from the attitude of the teacher) takes priority over behavior oriented toward achievement."[26]

Anxiety, as can be testified from everyday experience, also interferes with memory. Malmo and Amsel believe this is due to interference between relevant and irrelevant responses generated by the patient's anxiety state.[27]

One of the most devastating effects of anxiety and other strong emotions is the decrease in flexibility of response and the increase in stereotyping and repetitiveness. This was revealed long ago in studies of animals that had been subjected to stress. The phenomenon of fixation as a response to stress has been thoroughly reviewed by Maier.[28] In an early experimental study on human subjects in which the problem was to leave a room by one of four doors, Patrick demonstrated that if subjects were put under stress by being electrically shocked, or sprinkled with water, or annoyed by loud blasts from a horn, their attempts at escape were characterized by repetitive or even disorganized behavior.[29] He suggests that this is the kind of response that may be aroused in pupils by a teacher who is impatient with them while they are learning the use of certain formulae in algebra.

Experiment has shown that one frequent reaction to punishment or failure is to repeat an act that in the past has in some degree reduced the anxiety and tension, even though in the present situation it fails to do so.[30] Repeated punish-

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Anxiety," *Journal of Experimental Psychology*, 42:94-99, 1951.

Also R. E. Silverman, "Anxiety and the Mode of Response," *Journal of Abnormal and Social Psychology*, 49: 538-42, 1954.

[24] Oskar Diethelm and M. R. Jones, "Influences of Anxiety on Attention, Learning, Retention and Thinking," *Archives of Neurology and Psychiatry*, 58:325-36, 1947.

[25] Gaier, *op. cit.*, pp. 14, 20.

[26] N. A. Flanders, "Personal-Social Anxiety as a Factor in Experimental Learning Situations," *Journal of Educational Research*, 45: 100-110, 1951.

[27] R. B. Malmo and Abram Amsel, "Anxiety-Produced Interference in Serial Rote Learning with Observations on Rote Learning After Partial Frontal Lobotomy," *Journal of Experimental Psychology*, 38:440-54, 1948.

[28] N. R. F. Maier, *Frustration* (New York, McGraw-Hill Book Company, 1949).

[29] J. R. Patrick, "Studies in Rational Behavior and Emotional Excitement, II: The Effect of Emotional Excitement on Rational Behavior in Human Beings," *Journal of Comparative Behavior*, 18:153-95, 1934.

[30] I. E. Farber, "Response Fixation Under Anxiety and Non-Anxiety Conditions," *Journal of Experimental Psychology*, 38:111-31, 1948.

ment or failure, or increased severity of punishment, serves to increase the tendency toward repetitive behavior.

This means that an anxious person tends to avoid improvisations in a problem-solving situation. Instead of trying something new or different, he is prone, in his confusion, to go around in a circle, repeatedly trying possible solutions that have not worked in the past.[31] This tendency toward fixation of response, stereotyping, and repetitiveness not only inhibits effective creative thinking, reasoning, and problem solving but renders them impossible.

However, on occasions when persistence is a merit, it may be remembered that anxious individuals can be counted on to show the greatest persistence, particularly in stressful situations.[32] Ausubel found that anxious individuals tend to maintain their goals and level of aspiration in the face of failure experiences.[33] Rosenzweig points out that there are need-persistent reactions to frustration.[34]

When anxiety becomes more intense, learning responses become less effective. The tendency toward stereotyping may increase, resulting in severe blocking, rigidity, noncooperation, and attempts to leave the task.

Finally, in a significant study, Mandler and Sarason have demonstrated that it does make a difference whether the subject brings old anxiety to the task—whether he is an "anxious" person.[35] The presence of anxiety in the studies already referred to has been noted by two quite different methods. The subjects' answers to questions asked in some of the studies would indicate whether they have anxious symptoms which would reveal "old" or neurotic anxiety. The Taylor anxiety scale has been extensively used for this purpose.[36] The other method for assuring that anxiety is present in experimental subjects is to place them in a stressful situation which might be called "fresh" anxiety. Mandler and Sarason used both methods for assuring the presence of anxiety, and found that high anxiety subjects (old anxiety) do worse on a complex task that involves much anxiety (fresh anxiety) than in a situation which arouses less anxiety. In other words, old anxiety compounds the negative influence of fresh anxiety on learning.

In a later study Sarason and others found that the performance of high (old) anxiety subjects becomes worse under stress because the irrelevant tendencies of their old anxiety help to offset the facilitating and driving effects of the stress; but the performance of the low anxiety subjects actually improved under stress, owing to increased drive level unaccompanied by irrelevant tendencies.[37]

SOME EFFECTS OF FAILURE

Failure is intimately related to anxiety, and all the effects of anxiety that have

[31] Ausubel, Schiff, and Goldman, *op. cit.*
Also E. C. Cowan, "The Influence of Varying Degrees of Psychological Stress on Problem-Solving Rigidity," *Journal of Abnormal and Social Psychology*, 47:512-19, 1952.

[32] M. R. Sapirstein, "The Effect of Anxiety on Human After-Discharges," *Psychosomatic Medicine*, 10:145-55, 1948.

[33] Ausubel, Schiff, and Goldman, *op. cit.*, p. 546.

[34] Saul Rosenzweig, "An Outline of Frustration Theory," in J. McV. Hunt, *Personality and the Behavior Disorders*, Vol. I (New York, The Ronald Press, 1944), pp. 382f.

[35] G. Mandler and S. B. Sarason, "A Study of Anxiety and Learning," *Journal of Abnormal and Social Psychology*, 47:166-74, 1952.

[36] J. A. Taylor, "A Personality Scale of Manifest Anxiety," *Journal of Abnormal and Social Psychology*, 48:285-90, 1953.

[37] S. B. Sarason, G. Mandler, and P. G. Craighill, "The Effect of Differential Instructions on Anxiety and Learning," *Journal of Abnormal and Social Psychology*, 47:561-65, 1952.

already been mentioned in this discussion also pertain to failure and the threat of failure. Failure is intimately related to the concept of self because it is a function of the level of aspiration which is an expression of self-appraisal. Failure tends to lower the level of self-evaluation, and it has been found that high anxiety characterizes those individuals who think of themselves in negative terms.[38] It is hard to know whether lowering of the self-concept arouses anxiety or vice versa. Probably there is an interplay of these two factors. Failure leads to "negative anticipatory goal responses."[39] That is, failure makes a person expect less of himself, and this lowering of level of aspiration and self-esteem generates anxiety. Failure makes a person self-defensive, and the necessity to give attention to the self directs attention away from the learning task at hand.[40] Being told that one is inferior increases errors, probably because of the deflection of attention to the self with the consequent lowering of discrimination, and eventual failure or anticipation of failure in a task in which one is highly self-involved may lead to panic.[41]

But failure is not all bad. Actually everyone has at one time or another to experience failure in competition, sports, games, or some other area. Apparently, here again the level of residual (old) anxiety makes a difference. If anxiety is low, failure may lead to improved performance, at least for an intelligent person.[42] It is only when there is residual anxiety that failure arouses anxiety, tension, feelings of inferiority, and interferes with performance.

Lazarus and Eriksen have shown that college students with high grade-point averages in college tend to improve under stress in an examination situation, while poor students show a loss and greater variability when intelligence is held constant. Past successes or failures are factors that help to determine how a person will react under stress in the present.[43]

Many teachers believe that failure or the threat of failure serves as an incentive. I have heard of some who threaten pupils with low grades during the opening weeks of a school year, and actually give them low grades on their first papers, on the theory that this will prove to them that they cannot expect rewards for indolence. Unfortunately this form of treatment appeals only to the pupils who have least need of it, that is, the pupils who have previously experienced only success and hence are free of anxiety. The anxious, failure-ridden pupils are likely to respond only by deeper discouragement. In this connection two experimenters, Otto and Melby, once

[38] S. K. Escalona, *An Application of the Level of Aspiration Experiment to the Study of Personality*, Contributions to Education, No. 937 (New York, Bureau of Publications, Teachers College, Columbia University, 1948). Also E. L. Gaier, *op. cit.*

[39] R. R. Sears, "Initiation of the Repression Sequence by Experimental Failure," *Journal of Experimental Psychology* 20:570-80, 1937.

[40] R. S. Lazarus, James Deese, and S. F. Osler, "The Effects of Psychological Stress Upon Performance," *Psychological Bulletin*, 49:293-317, 1952.

[41] Lowering the level of aspiration as indicated seems to be contradictory to the maintenance of level of aspiration mentioned a few paragraphs earlier reporting the results of Ausubel *et al.*, and Rosenzweig. As Rosenzweig points out, need-persistence is the first and most common (and invariable) response to frustration. One may expect a lowering of the level of aspiration only under special conditions of self-threat. (Rosenzweig, *op. cit.*, p. 383)

[42] Mandler and Sarason, *op. cit.*

[43] R. S. Lazarus and C. W. Eriksen, "Psychological Stress and Its Personality Correlates: Part I. The Effects of Failure Stress upon Skilled Performance," *Journal of Experimental Psychology*, 43:100-05, 1952.

demonstrated that the elimination of the threat of failure in an elementary school did not result in lower achievement. There is no evidence that pupils achieve less because they are not made anxious by the threat of failure.[44]

Under intense anxiety, behavior becomes disorganized and disruptive. These effects may be compounded if the person grows preoccupied with thoughts of possible failure, humiliation, and similar threats to himself. This disorganization may spread so that the individual becomes "anxious," "neurotic," and more "emotionally unstable" in a general sense. Interestingly enough, some persons tend to compensate for these disorganizing tendencies by becoming (and probably ineffectively) more courageous, patient, or determined.[45]

One of the disastrous outcomes of the arousal of intense anxiety is that adjustments to it seem to have a kind of permanence. When the anxiety is mild, the stereotyping, repetitiveness, and other maladjusted responses tend to wear off (be extinguished). But when the anxiety is severe, disorganized, maladjustive, neurotic responses acquire a permanence that indicates a damage or lesion that does not spontaneously repair itself. Solomon has called this "partial irreversibility."[46]

This recital of the effects of anxiety on learning deserves serious consideration. A parent or a teacher who punishes a child or causes or permits him to fail is playing with fire. Like fire under control, mild anxiety can be of the greatest service, for it motivates to high endeavor and accomplishment. But, also like fire, anxiety can cause great and irremediable damage.

IMPLICATIONS FOR EDUCATION

What are the educational implications of these findings? We shall speak principally of the effect of anxiety on learning.

In general, anxiety in the classroom interferes with learning, and whatever can be done to reduce anxiety should serve as a spur to learning. This follows quite naturally from a general psychological principle first enunciated by Mowrer in 1940: that anxiety reduction is a reinforcement to the behavior preceding or accompanying it.[47] This means that if success enables a child to avoid anxiety-provoking reactions on the part of the teacher, then high achievement is a goal which will be sought by pupils. Putting it positively, pupils are powerfully motivated to achieve in order to win their teacher's esteem, approbation, and praise.

Teachers have been taught, from recent discussions of mental hygiene, that anxiety is to be avoided at all costs because of its devastating effects. "Many teachers do not dare to make demands on the child, and they hesitate to take steps that might be interpreted as a threat. Because therapy is carried out in an atmosphere of permissiveness, teachers are encouraged to believe that they should be more permissive in dealing with pupils. As a result many teachers do not dare to put pressure on a child,

[44] H. J. Otto and E. O. Melby, "An Attempt to Evaluate the Threat of Failure as a Factor in Achievement," *Elementary School Journal*, 35:588-96, 1935.

[45] O. R. Davis, "Increase in Strength of a Secondary Drive as a Cause of Disorganization," *Quarterly Journal of Experimental Psychology* 1:22-28, 1948.

[46] R. L. Solomon and L. L. Wynne, "Traumatic Avoidance Learning: The Principles of Anxiety Conservation and Partial Irreversibility," *Psychological Review*, 61:353-85, 1954.

[47] O. H. Mowrer, "Anxiety Reduction and Learning," *Journal of Experimental Psychology*, 27:497-516, 1940.

to assign tasks or to make requirements of him, lest the child become emotionally disturbed as a result. Examinations are abolished and marking systems modified because these tests and evaluations become threats instead of challenges."[48]

But psychology has demonstrated that anxiety has its positive as well as its negative values. As an energizer, anxiety —mild anxiety—serves a real function in education. Because of the fear of anxiety teachers have all but lost the art of challenge and encouragement. But there is a place for challenge in education, for placing difficult tasks before pupils—tasks in which there is a possibility of failure, tasks that require effort, persistence, and the use of one's powers. And this challenge may well be accompanied by commensurate rewards for those who are successful.

But challenge should not be offered indiscriminately. It should be given to pupils who are strong and confident, who accept the challenge willingly and with a release of their energies. Such a pupil is one who has formerly tasted success in easier tasks and thus can meet the new task with confidence, unafraid. Children who have experienced success ought to be challenged. In their case anxiety leads to increased effort and the higher satisfactions of successful accomplishment.

The pupil who has failed in the past needs to be given tasks on a lower level of difficulty—easier tasks that he can accomplish, tasks that can give him the experience of success. Anxiety, aroused in the child who has failed, leads to fixation, repetitiveness, disorganization, turning from the task, and discouragement, and these responses are to be avoided, for they turn a child away from learning. The child who fails to learn to read needs a fresh start with new materials on a level that he can master, so that he can experience the taste of success with reading. The child who has difficulty with arithmetic needs a fresh approach to numbers with simple exercises and problems that he can do successfully before he is challenged with more difficult problems.

This means that the teacher must know her pupils and how they will respond to stress and challenge. The child who is secure, stable, and free from neurotic tendencies can safely be given harder and more difficult tasks with greater challenge. But the anxious, neurotic child needs to be given easy tasks without too much pressure, threat, or challenge. With the stable child the possibility of failure is a risk worth taking, because he has had the taste of success in his past and has learned how to meet the threat of failure. But the neurotic, anxiety-laden child has already been harmed by threats and failure. He needs to taste success in tasks that do not threaten or challenge him too much until he has gained strength, and residual anxiety is no longer present. It must be admitted, however, that the child who has once been anxious, who has suffered punishment, or who has experienced failure, probably never overcomes the weakness that results from these experiences, and is ever after liable to succumb to stress that he may encounter. This means that it is extremely important to arrange that a child experience success from the beginning if he is to have good learning potentiality in later years.

In this connection teachers need to be helped in their assessment or diagnosis of the emotional stability of a child. It is as important for a teacher to know

[48] P. M. Symonds, "Is Frustration Compatible with Good Mental Hygiene?" *Progressive Education*, 30:107-10, 1953.

the anxiety level of a child with regard to learning tasks as it is to know his IQ. I foresee schools of the future giving children tests to determine their anxiety level which will be on a par with tests of intellectual level. Then the child with low anxiety level who has been successful in the past may be challenged to go on to more advanced and difficult tasks; whereas the anxious child who has been hurt by past failure may be presented with simple tasks within his range of competence.

Sarason and Mandler report that college students anxious about examinations show slightly lower actual grade averages than nonanxious students, but the results could have been attributed in this experiment to chance, and no effort was made to control other variables, such as intelligence.[49] Experienced musicians, singers, public speakers, actors, and athletes will tell you that they suffer various degrees of stage fright and anxious malaise before a performance, but that this preliminary anxiety in some way seems to be necessary to enable them to put on a stunning performance.

What has been said may be interpreted to mean that a little anxiety about examinations may be a good thing, certainly not to be discouraged, but that extreme anxiety may be disorganizing. Incidentally, there is nothing about an examination question written or printed that is inherently anxiety-arousing. All of the anxiety inherent in the examination situation comes from the reactions of other individuals—parents and teachers—to examination results. Teachers have the power to make an examination a challenge, or an ordeal to be dreaded or avoided if possible, by the attitude they take toward it and toward the results that individual pupils achieve.

[49] S. B. Sarason and George Mandler, "Some Correlates of Test Anxiety," *Journal of Abnormal and Social Psychology*, 47:810-17, 1952.

WHAT TO DO ABOUT FAILURE

Success and failure were mentioned earlier as important determinants of anxiety. From one point of view it would be desirable if failure could be eliminated from the vocabulary of educators, because its influence as a concept seems only to be harmful. No child should be told that he is a failure, or that he has failed. Bowing to reality, however, it is necessary on occasion to tell a student that he has not met certain requirements, in which case guidance ought to be substituted for failure. It is not sufficient to tell him that his work has not met set standards and then leave him out in the cold to work through his problems unaided. In addition to reporting to him his test results, a counselor should help the student plan for the future—to decide whether to try again, or to seek some alternate goal. Any person is unwise to put all of his eggs in one basket and to make the passing of a given examination everything or nothing. In embarking on any enterprise a person would be well-advised in advance to consider other goals in case his striving does not prove successful. But the word failure is too deeply imbedded in the educational vocabulary to justify the hope that it may be abandoned.

I doubt if schools have ever given attention to helping children adjust to failure. Failure is a necessary experience in life. Whenever two individuals play a game one wins, the other loses. Whenever two teams meet in a contest, if one wins the other loses. In school, only one pupil can stand at the top of his class on any test or exercise. To stand second or third or at the median is certainly not to fail, but neither is it to "win," and is in-

terpreted as failure by many pupils (and by their parents). What do schools do to teach pupils how to react to failure? The winner is congratulated, praised, and receives honors. The loser slinks away into obscurity.

A British writer, Gandine-Stanton, has given attention to this problem of the reactions to failure.[50] She believes that some experience of failure is essential to balanced development, if only to aid in the appreciation of success. Each experience of failure increases the fear of failure, and this invites further failure. Gould in a level-of-aspiration experiment[51] studied the reactions of her students to failure and found a bewildering assortment of reactions. Some individuals were stimulated to do better, others became discouraged and lost interest in trying, still others became disorganized and confused with regard to the task and their relations to it. Some attempted to overcome discouragement by such devices as making excuses and attempting to rationalize their poor performance. Some refused to hold the backward look and insisted on focusing their attention on possible successes in the future. Some lost interest in the task and showed signs of wishing to quit. Others attempted to compensate for their failure by pushing themselves to accomplishments in other directions. Some managed to escape the threat of failure by concentrating their attention on certain aspects of the problem, such as making a game out of the accuracy of their estimates or keeping a record of their performance and treating the results statistically.

Gandine-Stanton discusses what may be the more constructive reactions to failure. She believes that putting forth more effort as a reaction to failure, although a very common response, is usually relatively futile. Seldom does a person fail in a task because he did not try hard enough. She suggests that instead of putting forth more effort, frequently it would be more appropriate to diminish the energy output and to stop altogether in order to survey the situation. Usually one fails because he used poor methods; to improve he must change his performance in some way. After failure perhaps the best policy is to stop and think, What can I do differently? Certainly one is poorly advised merely to try again the same methods and try harder this next time. If one is faced with insuperable difficulties because of his own lack of ability or skill, or because of the conditions surrounding the task, it would be better to withdraw (or to make up the deficiencies) rather than to continue unsuccessful efforts.

A teacher would do well to take an unsuccessful student aside and discuss with him his feelings and attitudes toward his failure, and what steps he might take next—not necessarily to redeem himself, but to make the most effective use of his efforts and abilities in the situation. There have been few reports of efforts to teach pupils how to react to failure. One report by Keister and Updegraff of work with young children showed that after training in puzzle-solving children tried longer, manifested more interest in solving problems, and completely eliminated emotional behavior in connection with difficulties they might encounter with them.[52]

Incidentally, it is equally desirable to

[50] D. A. Gandine-Stanton, "A Study of Failure," *Character and Personality*, 6:321-34, 1938.

[51] Rosalind Gould, "An Experimental Analysis of 'Level of Aspiration'," *Genetic Psychology Monographs*, 21:3-115, 1939.

[52] M. E. Keister and Ruth Updegraff, "A Study of Children's Reactions to Failure and An Exploratory Attempt to Modify Them," *Child Development*, 8:241-48, 1937.

teach children how to react to success. Just as unfortunate attitudes toward failure may develop, so a child may develop unfortunate attitudes toward success. He may become overconfident, he may feel that the world owes him success, he may be unable to tolerate stiff competition, and he may become too self-satisfied. Some of these attitudes may be the result of attitudes expressed toward him by others, but some of them may be outgrowths of the fact that he has experienced only success. Everyone should have the opportunity to learn how to react constructively to both success and failure.

This discussion has been exclusively concerned with the negative emotions, principally anxiety. What about the positive emotions—love, happiness, euphoria? Strangely enough we know less about the influence of positive emotion on learning than we do about negative emotion. Within the past decade, owing to the influence of the clinical study of individuals with emotional difficulties, many persons have been encouraged to answer psychoneurotic inventories and to answer questions about their "problems." But the positive emotions still remain in the private domain, and psychologists have not encouraged individuals to reveal the secrets of their passions. By and large we know that learning is helped by success. We are told that love of teacher is one of the prime incentives to learning in school. But common observation tells us that when positive emotions become too strong they too can become disorganizing. (Perhaps there is an element of anxiety present when positive emotions become intense.) The lovesick adolescent is diverted from his studies. Too much mooning and yielding to infatuations can usurp attention from more serious learning until the disorganization can be characterized by such an ugly term as debauchery. Apparently, then, the findings with regard to the negative emotions apply equally to the positive. Mild positive emotion has a stimulating and energizing effect, perhaps even stronger and more salutary than anxiety, but strong positive emotion can also become disorganizing and disruptive of learning.

We may resolve the dilemma posed at the beginning of this discussion by saying that mild emotion serves as an important and indeed essential incentive to learning, but that when emotion becomes intense, and particularly for the individual who has not wholly adjusted to previous stressful situations, it can become disorganizing and hence interfere with learning.

Discovering and Stimulating Culturally Deprived Talented Youth*

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THE Demonstration Guidance Project, initiated at Junior High School 43, Manhattan, in September 1956, was recommended by the New York City Board of Education's Commission on Integration to prevent the stifling of educational motivation in children from families struggling economically and without an educational tradition. Most of the children from this background leave school as soon as possible to earn money. Having failed to achieve their educational potential, they are depressed vocationally and educationally and their talents are lost to higher education manpower pools. This experiment is the forerunner of the national Community Talent Search, sponsored by the National Scholarship Service and Fund for Negro Students, to assist local communities to discover their hidden human resources from all economically deprived groups regardless of race, creed, or sex. It is hoped that the experiment will help communities to achieve the American ideal of equality of educational opportunity for all.

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FACTS AND FIGURES

Among the many research references that may be cited, two[1] summarize studies of facts and figures. These summaries reveal that: (1) only about half the nation's students graduate from high school; (2) fewer than half (45 per cent) of the high-scoring seniors plan to go to college; (3) a striking amount of economic and cultural determinism is connected with college-going; and (4) relationships between socioeconomic status, scholastic ability, and failure to go to college indicate the necessity for early identification and motivation of youth with college ability.

BACKGROUND OF SCHOOL POPULATION

Junior High School 43, Manhattan, was selected for this project because it met, as closely as possible, the criteria set up by the Commission; namely, that the school have a low status socioeconomic and mixed ethnic population, a coeducational school population, an outstanding and

[1] Cole, Charles C., Jr., *Encouraging Scientific Talent* (New York: College Entrance Examination Board), 1956.

Hollinshead, Byron S., *Who Should Go to College* (New York: Columbia University Press), 1952.

dedicated principal and counselor, and accessibility to an academic high school —George Washington High School—in which the study of most students is continued. The ethnic composition of the school population is approximately 48 per cent Negro, 40 per cent Puerto Rican, and 12 per cent white.

MAJOR OBJECTIVES OF THE STUDY

Succinctly stated, the major objectives of the study are:

To identify all potentially able students through the use of a variety of techniques, including appropriate group and individual tests and teacher and counselor observations and ratings, recognizing that the usual tests of academic aptitude and achievement may underestimate the potential ability of culturally deprived children.

To experiment with new approaches to the identification of able students, including new tests, devices, and techniques that may provide clues to potential achievement.

To test the validity of the methods of identifying able students and predicting academic progress over a period of several years.

To develop an intensive, stimulating individual and group counseling program. This will entail several approaches: (1) providing increased guidance personnel—one guidance counselor for at the most every 300 pupils in the junior high school; (2) instituting an expanded, dynamic group guidance program; (3) organizing intensive individual counseling when needed; (4) developing a more intensive parent education program; (5) coordinating and centralizing school records for guidance use and coordinating related services; (6) providing remedial work, curriculum enrichment, and opportunities for acceleration where indicated; (7) providing clinical service where needed, including psychological, social work, and psychiatric consultation; (8) coordinating with out-of-school community agencies; and (9) supplying temporary financial aid to students in need.

To develop a program for teachers through workshops and staff conferences to assist them in the identification and stimulation of these children, and in the modification of curriculum.

To continue this program of stimulation through the high school years, having one guidance worker transfer to the high school with each grade.

To measure pupil growth in abilities, educational achievement, and educational and career aspirations at periodic intervals during the study.

To increase the percentage of students entering college or other post-high school institutions, and those completing high school, and decrease the percentage of those leaving school. This objective will be evaluated by comparing similar groups of students who have graduated from the same junior high school in the years preceding the experiment and possibly current students of other junior high schools.

TIME PLAN FOR THE PROJECT

The project was planned for a period of six years, so that the 1956 seventh-grade junior high school students selected for this study could be followed through graduation from senior high school in 1962. Its importance lies not only in services rendered and information acquired about the particular group—grades 7, 8, and 9—under study but, more important, in providing a pilot approach to a major socioeducational problem that exists nationally—motivating and helping able students to continue their education beyond high school. It is hoped that much will be learned that can be applied to a large segment of the general population to improve their education, thereby increasing the contribution they can make to the national welfare.

RESEARCH DESIGN

The special emphasis of this report is on the research and progress to date. It is premature to say what the conclusions

will reveal, but the trends will be indicated. The major foci of the research include:

Identification of academically talented students by comparative studies and correlational anlaysis of group and individual intelligence test scores of verbal and nonverbal content, "culture-fair"* tests, achievement test scores, rating scales, cumulative record data, and teacher judgments of academic aptitude.

Intensification of the counseling program for students and the parent education program to be evaluated by evaluative criteria techniques, interview, questionnaires, and observation.

Teacher training to be evaluated by reports of supervisors, observation, and self-evaluation.

Follow-up of students by questionnaire interview, analysis of student school grades and test scores, including high school and post-high school records. This includes studies of comparable student populations in previous years to survive in terms of percentage completing high school, percentage entering post-high school institutions of learning and, if possible, similar groups from comparable schools.

PROGRESS REPORT TO JUNE 1958

Identification of Able Students

For the initial report of progress to date, which will be refined by further studies, the results indicate that a college preparatory student in grade 9 should have: (*a*) an average of at least 65 per cent in five major subjects of the junior high school ninth-grade curriculum; (*b*) an IQ of 90 or above on a standardized verbal test; (*c*) a nonverbal IQ of 100 or above; (*d*) a paragraph-meaning grade score of at least 7.0; and (*e*) a grade score of at least 6.5 in arithmetic reasoning on nationally standardized tests. These results, correlated with first-term averages, indicate possible success in a college preparatory course in grade 10 at George Washington High School in New York City. Additional studies and refinements of the identification criteria will be made as the study progresses in this senior high school. Thus, more definitive criteria and predictors of college preparatory success may be revealed. The aim has been to include any student who has a chance for success in a post-high school institution of learning.

Improvement in Reading and Study Skills

In both the junior high school and the senior high school, intensified programs in reading and work-study skills have been applied to the students selected as prospective college preparatory candidates. As measured by objective and standard tests, the progress and achievement of these students have been above the norm usually attained. The gain in reading ability exceeded by two months, or one-fifth of a school year, that normally expected of them. The motivational and instructional program is paying dividends in terms of academic achievement. Similar improvements are evident in mathematics and foreign-language programs where special instructional and tutorial plans have been employed with students from low-status economic and cultural backgrounds.

Because of the cultural deprivation in homes, special efforts are required to help students from these homes to achieve academically with their peers from culturally privileged homes.

* "Culture-fair" is a concept applied to tests that purport to minimize the differences in test content that may be associated with any one cultural environment.

Intensification of Counseling Program for Students and Parents

The cultural enrichment program for students, the intensified guidance program for students and parents, and the total effect of the school program have spurred students and parents to aspire to realize the potential of the culturally deprived students. During the first and second years of the study a series of parent workshops were held in the school. Home visits were made by a social worker, guidance counselors, and teachers.

The results of a questionnaire survey indicate that the wish of many students to achieve a higher occupational and educational status than their parents is shared by the parents. Approximately two out of three of the probable college-preparatory course boys aspire to enter a career of professional status. Easy-to-reach parents have similar aspirations for their children.

During the first year of the project more than 850 individual personal or telephone contacts were made with parents to enlist their cooperation in furthering the best interests of their children and to acquaint them with the purpose of the project. But it was still difficult to reach many of the parents even after multiple contacts.

Special efforts were made during the second year of the project in the junior high school (1957-58) to see each parent or guardian at least once. The counselors succeeded in seeing over 90 per cent of the parents of the more than 500 experimental students still in the junior high school. Some of these parents were seen early in the morning, before school opened, so that they would not miss too much time from work.

A special research study was made of twenty-five of the parents who could not be seen by the counselors. These consisted of (1) parents who said they could not come to school and (2) parents who did not respond at all to the counselors' attempts to contact them.

These hard-to-reach parents were not actually inaccessible or resistant. When arrangements were made to visit them at home at hours convenient to them, generally in the evening, all were responsive and cooperative.

They varied in background, aspirations, and expectations and there seemed to be real differences between the two groups. Those who replied that they could not come to school were prevented by practical limitations, while those who did not reply were further deterred by attitudes or feelings that if the child was not in trouble there was no need to go to school, and hesitancy because of inability to speak English. The first group was generally from a higher occupational and educational background, had higher aspirations for their children, more frequently expected them to attain these goals, and were more keenly aware of educational and career opportunities than the second group. The latter group was more likely to be concerned with immediate problems and less with long-range plans of their children.

Teacher-Training Program

This study has involved teachers as well as students and parents. The reports of supervisors and observers and self-reports from teachers have been uniformly favorable. Teachers have understood the purposes of the study. They have cooperated. They have been sympathetic and have voluntarily devoted time and services to achieve the major objectives of the study. All but a small minority have supported the idea of helping the economically and culturally deprived stu-

dents to realize their maximum goals, educationally and vocationally.

Follow-Up of Students

It will not be feasible until 1960 and later to determine the post-high school careers of the original ninth, eighth, and seventh grade experimental pupils in this study. The bases of comparison will be with pupils from the junior high school who have attended post-high school institutions of higher education. The classes of 1953 and 1954 graduating from Junior High School 43, Manhattan, had 10.1 per cent and 10.7 per cent, respectively, applying to post-high school institutions for further education. Of these, 7.3 per cent have applied each year to liberal arts colleges, 2.4 per cent to community colleges, and about 1.1 per cent to nursing or medical aide schools. These data will be the bench mark with which later classes involved in the study will be compared. The comparisons will be equated with national and local trends in post-high school applications and registrations.

In a special study of the graduates of Junior High School 142, Queens, with white and Negro students of approximately the same middle class socioeconomic status, 69 per cent of the white and 75 per cent of the Negro students expect to go to college. This study indicates that these Negroes have a higher level of aspiration to attend college than is found among a similar selected sample of white students of comparable socioeconomic status.

Summary

This study is new only in the sense that a special effort is being made to motivate and stimulate academically able students from low-income homes and their parents to aspire to maximum educational goals. It is supported by the Board of Education of the City of New York, National Scholarship Service and Fund for Negro Students, and the College Entrance Examination Board. It may contribute to our knowledge of how much special services in guidance, instruction, and cultural enrichment can affect the educational goals and achievements of able students from economically and culturally deprived homes.

The Arts in a Satellite Age*

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In his article "Education and the Technological Revolution,"[1] George S. Counts has convincingly described the influence of modern technology on every aspect of our lives, today and tomorrow. There can be no question but that science has become an all-powerful force in many spheres: industry and agriculture, medicine and public health, communications and the waging of war. Indeed, it has the clear potential of making the world we live in a veritable Utopia in the decades that lie ahead—or, at the other extreme, a macabre, radioactive wasteland with, at best, a surviving band of mutated human monsters vaguely trying to remember what went wrong back in the mid-twentieth century.

No thinking person would dispute Professor Counts's conclusions. For us to retain our greatness as a nation, or indeed even to survive in the face of the now more widely recognized Soviet advances in education and technology, we must place far heavier national emphasis on science and the preparation of scientific personnel. Not only does this involve the education of more skilled engineers, chemists, and physicists; it will necessitate also the creation of a population that is technologically literate and that has respect for scientists and their achievements. If the Soviet Sputniks have brought us to this realization, we should be grateful for them.

There is danger, however, in the acceptance of the attractive, pat solution "build more and better scientists." Obviously this can be done, through subsidies, grants, research programs, curricular revisions, and the like, if we put our national will to it. But will this course of action alone solve our problems and dispel the unwelcome Soviet threat?

First, we must recognize that the problem is one not only of creating more scientists, but also of using them most effectively. Manpower experts tell us that we have a considerable number of skilled engineers today who are being used in managerial, supervisory, and even clerical capacities. Clearly, if we are to go to great lengths to develop scientific manpower we must use it to best advantage.

Second, we must resist the imbalance in educational emphasis that is likely to result from an incautious response to national hysteria. If we permit professional education to become so narrowly channeled that it will be turning out the super-

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[1] George S. Counts, "Education and the Technological Revolution," *Teachers College Record*, 59:309-18, March 1958.

specialist, the chemist or physicist who knows only his own field, we will suffer a major setback in American education. A number of leading educators, presidents both of liberal arts colleges and of schools of technology, have decried this trend. As one, they have expressed the conviction that the arts and sciences are not mutually antagonistic, but complementary, and that we must strive to preserve balance and diversity rather than overspecialization in higher education.

Dr. Robert F. Goheen, president of Princeton University, has stated this point of view:

> Our society needs educated individuals to play fruitful roles in our social and political life as well as in the production of new scientific knowledge and of engineering techniques, including missiles and satellites. A scientist without broad humanistic training may be irresponsible and shortsighted.[2]

WHAT SCIENCE CANNOT DO

Dr. Goheen's statement suggests the most important fallacy in the assumption that through technology alone we can achieve strength and security. There are some things that science cannot do. The most important of these have to do with the realms of values and moral choices, of human feelings, convictions, and decisions. A perfected machine can do what it is told to do, but the degree to which it can make its own choices—even in the most advanced devices of automation—is severely circumscribed and, in fact, has already been settled by the inventor. It still takes a human being to press the switch, pull the trigger, release the rocket. And a machine cannot, today or in the foreseeable future, conduct negotiations, offer a hand in friendship, or sway the will of a nation.

In the spheres of human values, moral convictions, and feelings it is clear that religion, philosophy, and the arts are paramount.

It is the purpose of this discussion to examine the role of the third of these—the arts—in the light of the contribution they make to our nation's strength and security. For many, this may represent an unacceptable assumption—that the arts are capable of making such a contribution. To them, the arts may be important in terms of gracious living and of experiencing aesthetic sensations of beauty, but certainly far removed from the major issues of national survival. Is this true? Let us examine the arts first in terms of their role in international relations, and then in terms of their function in national life.

ARTS AND THE INTERNATIONAL SCENE

Americans have, during the past year, paid considerable attention to achievements of the Russians in the fields of education and science, and have grimly resolved to heed the Soviet example in these areas. But we have, in large part, overlooked the effective use that they have made of cultural ambassadors. As Howard Taubman pointed out,[3] the moment that World War II ended, their (the Russian) artists entered the occupied nations of Europe. They came in vast, impressive swarms—and they are still coming. They were inflicted on the satellite nations of Eastern Europe as part of special Soviet Friendship Months,[4] and they were thrown, like shock troops, into

[2] Robert F. Goheen, as quoted in Benjamin Fine, "Education in Review," *New York Times*, November 17, 1957, Review of the Week Section, p. 11.

[3] Howard Taubman, "Cold War on the Cultural Front," *New York Times*, April 13, 1958, Sunday Magazine, pp. 12-13, 107-8.

[4] Leland Stowe, *Conquest by Terror* (New York, Random House, 1952), pp. 232-46.

the uncommitted nations of Western Europe at times of national elections and political indecision. This year the Moiseyev dancers experienced a triumphant tour of the United States, the Moscow Art Theater performed in Paris and the Georgian folk dancers in Rome, and a gold palm first prize was awarded the Soviet film "The Cranes Are Flying" at Cannes.

Clearly, the Russians are not satisfied with their scientific programs, or with the forms of economic warfare which they have been waging so successfully throughout the world. They have been and still are waging a full-scale cultural cold war. For us, this represents a challenge and an opportunity. Howard Taubman comments:

> If a cold war is unavoidable, it is least perilous when waged with laughter and beauty, with heart-lifting aspirations and life-giving visions. For the arts do not destroy; they create. They remind us that the soul of man is indivisible, no matter what distances and differences there may be among nations and their political, economic and social institutions. A picture, a poem or a song can give form to inchoate yearnings all flesh is heir to. . . .
>
> Because the arts express man's precious inner life, they . . . can surmount the barriers of languages and frontiers. They can be an eloquent ally in the struggle for mutual understanding and trust. If you wish to win the good opinion and affection of peoples, you will do so more persuasively if you show them your artistic achievements than if you display your strength or material wealth.[5]

Two illustrations of this occurred during the spring of 1958, when the young American pianist Van Cliburn won first prize in the International Tchaikovsky Competition in Moscow and returned to national adulation in the United States while, simultaneously, the Moiseyev Folk Ballet toured this country entertaining capacity audiences in all major cities. What did these two striking events signify? For one thing, that the communicative powers of music and dance can surmount, as Taubman puts it, the barriers of languages and frontiers. Secondly, they demonstrated the willingness of people in each nation to enjoy the art of the other; to acknowledge mutual creative urges and abilities. So, the troupe of Russian dancers and the young American pianist accomplished much in terms of good will for their own country and of human understanding in general.

There have been numerous other examples of cultural emissaries on both sides of the Iron Curtain. A company of Gershwin's folk opera, "Porgy and Bess," toured Europe and the Soviet Union, thrilling their audiences with an unaccustomed form of theatre art and, incidentally, giving many Europeans a new view of the American Negro and his opportunities. Marian Anderson and Louis Armstrong are but two of the great American Negro performers who have accomplished similar missions.

Particularly in the Orient, where music, painting, and dance are closely intertwined with the cultural heritage of the people, our artistic ambassadors have been enthusiastically received. The Martha Graham Dance Company was welcomed by the *Times* of Indonesia with these words:

> Once in a generation a gifted individual is endowed with the ability to project to strangers some brilliant facet of a nation's art and thereby reveal something of its soul. This Martha Graham has done with such virtuosity that she has dispelled the prevalent notion that Americans live in a cultural wasteland peopled only with gadgets and frankfurters and atom bombs.[6]

[5] Taubman, *op. cit.*, p. 12.

[6] Taubman, *op. cit.*, p. 107.

To some extent, such tours have been carried on with the aid of the State Department, which gives support to efforts like the International Exchange Program of the American National Theater and Academy in sending the New York City Ballet Company and Ballet Theater overseas. Another agency which has been active in this field is the Institute of International Education, which in 1956 held a Conference on the Arts and the Exchange of Persons, and more recently published a *Directory of International Scholarships in the Arts*.[7] This booklet shows an impressive number of opportunities for international travel and study in the fields of architecture, creative writing, dance, design, music, painting and sculpture, and the theatre arts. And of course there has been a certain amount of independent interchange of the arts. American playwrights have had their works produced overseas, and many artists and writers have held exhibitions or had books published through private arrangement.

But, viewing the whole picture, how does our national effort in the field of the arts measure up?

By any standard, and particularly when compared with the Soviet support of cultural ambassadors, it has been inadequate. As an example, the Russians spent at least $50,000,000 for their pavilion and artistic attractions at the Brussels World's Fair, while the United States spent $13,445,000 in a similar effort.[8]

Not only have our international cultural programs suffered from insufficient financial support; they have been hampered on occasion by political pressures and interference. We are well aware of the iron controls exerted by the Soviet leaders over all forms of artistic expression in their land. The artist, the dramatist, the composer, the novelist must all adhere rigidly to the accepted political "line"; any attempt to deviate is ruthlessly punished. Surely, in America there is no comparable sort of manipulation of the arts for political purposes. However, in recent years there have been unfortunate instances of political interference with cultural programs Two illustrations follow.

In 1946, the State Department assembled seventy-nine paintings by living American artists and sent the collection on a European tour in an effort to compete with the officially sponsored exhibitions that France, England, and especially the Soviet Union had been sending around Europe. The show met with such acclaim, first in Paris and then in Czechoslovakia, that Russia immediately organized and dispatched a rival exhibition. At this point, General George C. Marshall, then Secretary of State, was compelled to call the exhibition back because a number of Congressmen had complained that the paintings were too "modernistic," and that several of the painters had left-wing affiliations. The paintings were put into dead storage and later sold, and the venture was entirely abandoned.

Ten years later, in 1956, foreign tours were planned for three important art exhibitions and the Symphony of the Air. The art exhibitions had been prepared by the American Federation of the Arts, whose president was James Schramm, a leading businessman and former member of the Republican National Committee, and whose board is composed of important museum officials and civic leaders.

[7] *The Arts and the Exchange of Persons*, Proceedings of the Conference (New York, Institute of International Education, 1956), and *Directory of International Scholarship in the Arts* (New York, Institute of International Education, 1958).

[8] Taubman, *op. cit.*, p. 107.

The Symphony of the Air, the world-famous orchestra originally formed by Arturo Toscanini, had toured Japan the previous year. There it had been enthusiastically received and had served to generate good will for the United States.

Yet these proposed tours were cancelled, the reason given being that some of the artists or performers involved had at one point had questionable political associations. While such action may be open to discussion, it is difficult to see, on the face of it, how such past associations could have harmfully influenced the tours in any way. None of the paintings or musical works contained anything of a political nature. Indeed, one of the exhibitions of paintings dealt with sporting events—hardly a controversial subject. Of the artists in question, several were no longer even alive.

This sort of exaggerated caution and financial conservatism in support of cultural tours have undoubtedly had much to do with the ineffectiveness of our total international effort in the arts.

THE ARTS IN AMERICA

Even those who may reluctantly concede that art is an effective ambassador of good will to those nations of the world that have a distorted or an incomplete picture of our country are likely to believe that art, within our own society, has a limited and shallow function. In this they are supported by the traditional American value system that attributes great worth to practical, material physical achievement but minimizes the importance of things of the spirit. This attitude, so unlike that of most other nations of the world, is partly due to our rigid pioneer and Puritan traditions and partly to our comparative youth as a nation, and our amalgam of cultural heritages.

To return to opening paragraphs of this discussion, there is little doubt that in our society art is a poor second to science in the life of the nation. Most people, as Brooks Atkinson has pointed out, have far more confidence in the objective standards of the scientific point of view than they have in the insights, passions, aspirations, and wonder of the poets. But, Atkinson goes on to say:

> . . . it [science] does not satisfy every need. We cannot build mental hospitals fast enough to look after those who have succumbed to psychic disorders. The common life that ought to be enjoyed and sustained by everyone is marred by juvenile delinquency, riots against Negro school children in the South, vilification of nonconformists, distrust and suspicion of neighbors, and other forms of hysteria that derive largely from lack of human understanding. This is the area where insight is needed and this is the area where our civilization is out of balance. We know the price of everything but we are not much concerned with its value.[9]

Obviously, art cannot of itself impose a set of values or moral laws. What it can do—and this refers chiefly to the kinds of art which Suzanne Langer terms "discursive" (that is, having recognizable meaning, as opposed to completely abstract content)—is heighten awareness and understanding of life.

This is true of all art, whether discursive or nonobjective, which in some fashion reflects man's universe and, through the skilled organization of sound, form, color, line, or movement, arouses his aesthetic response.

But it is particularly so in those forms of creative expression which are based on the use of language, such as the poem, play, or novel. Here, man comes face to face with his human condition and with the ultimate, deepest concerns of his exis-

[9] Brooks Atkinson, *New York Times*, September 30, 1956, Sunday Theatre Section, p. 1.

tence. Speaking for and from the soul of its creator, such art has the unique power to dramatize and clarify human relationships, to induce vivid self-identification, pathos, and indignation, and to impel the viewer into action.

There have been works of art which were also powerful social documents in all ages. An example of comparatively recent vintage is the moving play "The Diary of Anne Frank," based on the actual diary of a young German-Jewish girl who, with her family and friends, hid in a Dutch attic for over two years, but who finally was discovered by the Nazis and died in a concentration camp. In 1956, this play opened in six German cities. According to a Reuters dispatch, it touched the conscience of the public more profoundly than anything else bearing on the subject of the Nazi slaughter of Jews:

> Deeply moved theatre audiences received the play in shocked silence. . . . When movies actually taken in a concentration camp were shown to German audiences just after the end of the war, they were received with derision and disbelief. But the reception given to this play . . . was different. The impact of its portrayal of the horrors of Nazism struck home, as the silence that greeted most of the performances showed.[10]

A number of reviewers in German newspapers drew parallels between the Nazi terror as portrayed in the play and the Soviet control of East Germany, or suggested that it was a "stirring warning against the threatening revival of the Nazi regime. . . ." But perhaps the most significant outcome of the play's German performance was that, three months later, a recreational and cultural center for children, the Anne Frank House, was opened by the city of West Berlin.

Small wonder that in a dictatorship, control of the arts is invariably seized by the ruling clique, and made to serve the purpose of the state. The clearest recent example of this has been in Soviet China where, during the past ten years, there has been a master plan for reshaping every aspect of artistic expression so that it will serve most effectively as a tool of education and propaganda for the new Communist state. In the words of Mao Tse-tung, the artist is simply "part of our revolutionary machinery . . . a weapon with which to unite and educate our people, to attack and destroy our enemy."[11]

The possibility that art may be debased in this way underlies, of course, the objections of many Americans to any form of federal support for painting, music, or the theatre. That it need not be so, that art may be aided without being subverted, has been clearly demonstrated in a number of other democratic nations, where there has been consistent and generous support without any attempt to manipulate it for partisan reasons.

If we are to be genuinely concerned about the nature of the forces that govern the bulk of artistic expression in our land, we should look elsewhere—at the controls that actually exist. For it is obvious that the mass media of communication, particularly the vast radio and television networks which feed our population endless rations of drama, music, and other forms of entertainment, are themselves directly controlled by commercial sponsors and advertising agencies.

This stranglehold over the most potent (because they are in the home and they are free) forms of what Gilbert Seldes calls the "public arts," has been bulwarked by such network practices as "option-time" and "must-buy" provisions

[10] Brooks Atkinson, *New York Times*, October 14, 1956, Sunday Theatre Section, p. 1.

[11] Peggy Durdin, "Red China Revealed in Her Art," *New York Times*, January 5, 1958, Sunday Magazine, p. 59.

which have served to restrict competition and independent selection of non-network productions.[12]

As a consequence of this control of the airwaves by commercial sponsors whose sole concern is to reach the largest possible audience per dollar spent (a perfectly valid concern from their point of view), television programming today consists largely of old Westerns, vacuous domestic comedies, grunt-and-groan wrestling, insipid parlor games and quizzes whose fascination, for the most part, is based on their fabulous cash prizes. All of these are accurately aimed at a projected audience somewhat below the supposed average twelve-year-old mind. True, there have been a number of courageous and stimulating television ventures, "Omnibus," for one, but these serve chiefly to illustrate what might be if creative producers, writers, actors, and musicians were given a free hand in the medium.

There is no intent here to say that all popular entertainment should be at the highbrow level. This would be snobbery; we must recognize that, even as we have socioeconomic classes, we have taste classes.

The real question is, Must such an overwhelming proportion of this tremendously influential medium continue to be devoted to near-trash? If so, and "pay-television" appears to offer only the most tentative of possible solutions, what major stimulus lies ahead for the arts in America?

To some, this may appear to be an unnecessary question. Why do we need such a stimulus at all? The answer lies in the nature of our society—the very technological society that Counts describes.

As an example, take music. Several decades ago orchestras and bands flourished in cities and towns large and small all over the country. Today, with radio and television, and with juke-boxes blaring in taverns and diners, only a comparatively small number of professional musicians are doing well, and the vast majority are barely eking out an existence. Even the regularly employed orchestra member in the large symphonies makes comparatively little, and must add to his salary by teaching music.

In a more prosaic form of entertainment—sports—the widespread broadcasting of major league baseball games and boxing events has hurt the minor league severely and has virtually wiped out the small neighborhood boxing club. In the area of theatre, true, a considerable number of actors, technicians, and directors find employment through television, but think how many more would be at work if they were playing before live audiences all around the country. The serious writer, the composer, the painter, all of these find it almost impossible today to find a real audience, and to rely on their art for a satisfactory livelihood. Without teaching fellowships, grants-in-aid, or frankly commercial tasks (which inevitably detract from their creative efforts) it would be almost impossible for them to continue their work.

Perhaps this is inevitable. But is it the kind of atmosphere in which we can honestly expect the arts to flourish, to express the best in America, to provide us with cultural ambassadors of high quality abroad, and to enrich our lives at home?

Surely not. And yet, if we value art, we must recognize that it is expensive, particularly when it involves large group enterprises. A number of the major opera and ballet companies and civic theatres in our country today, even if they sell every seat for every performance, cannot cover their expenses. The mere fact that we

[12] "Monopoly and Monotony," *The New Republic*, September 16, 1957, p. 5.

have a considerable number of excellent orchestras, civic theatres, and dance and opera organizations is a testament to the creative will of artists and lay personnel in these fields, and to the willingness of many Americans to give privately to support major forms of art expression.

But when there is a deficit each year, and when the wolf is constantly at the door (if the public does not come through with contributions or the city council does not vote those badly needed few thousand dollars), how can music or theatre organizations experiment with or commission new works, train new talent, or expand professionally?

John Martin has compared the plight of American ballet companies, "perpetually on the verge of financial collapse and dissolution," with the situation of the Sadler's Wells Ballet. Under the sponsorship of the British Arts Council, this superb dance company has enjoyed an adequate and completely nonpolitical government subsidy, a permanent home, a permanent organization, and an atmosphere of respect and security in which to create and to grow.[13]

There are numerous examples of how other nations—far less wealthy than the United States—have supported their arts.

Recently Australia conducted a huge national lottery to finance an opera house in Sydney. A year ago the Canadian Parliament established a council for the arts and endowed it with $50,000,000. Our own financial starvation of the arts compares dramatically with France's annual grant of approximately $4,500,000 to the Paris Opéra, the Opéra Comique, the Théâtre Français and the Odéon.

Many single towns in Germany spend more on music than the United States government does. Denmark appropriates $750,000 annually to its Royal Theatre in Copenhagen, and Sweden's Opera, State Theatre and Lilla Scena, an experimental adjunct, receive annual subsidies provided by a national lottery.[14] Recently the Netherlands established a scheme for national assistance to fine artists by purchase of their works, to be regulated by advisory committees of recognized artists and art authorities.

Why have we Americans not done the same? The answer, as suggested before, lies in our failure, as citizens and legislators, to recognize the importance of art in our own society and in international exchange. During the past year, however, there has been a vigorous display of legislative action aimed at federal support of the arts. These bills, designed to establish a Federal Advisory Commission on the Arts and the United States Arts Foundation, have received a considerable amount of enthusiastic support from educators, artists, and private citizens.

For those teachers in our schools and colleges who are concerned about this situation it would seem that there is a desirable course of action.

First, at the same time that we support logical and urgently needed programs of expansion of scientific education in this country, let us do everything possible to make sure that education for the arts in our schools and colleges is nurtured and upgraded. Only in this way can we build public appreciation and enthusiasm for these forms of creative endeavor of which many Americans are virtually ignorant.

Second, if they are concerned about the arts in public life, educators on every level should throw their weight behind Congressional efforts, on a non-partisan basis, to lend financial assistance and the prestige of national support for the arts.

[13] John Martin, *New York Times*, October 4, 1953, Sunday Theatre Section.

[14] Marc Connelly, *New York Times*, August 5, 1957, Sunday Theatre Section, page 1.

Elementary Foreign Language by Television*

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A QUITE modest curriculum project of the Denver (Colorado) Public Schools has turned up many interesting and unexpected implications. The project itself was very simple. It consisted of a series of lessons in French for boys and girls in the fourth, fifth, and sixth grades every Tuesday and Thursday evening from seven-thirty to eight o'clock over KRMA-TV, Channel 6, "Educational Television for Denver," for two consecutive periods of nine weeks each.

This was open-circuit telecasting, meaning that anyone who has a television set (85.9 per cent of Denver's population) and an inclination to study French, might join the "class." The television teacher made no particular point of the fact that she was teaching chiefly for children in intermediate grades, but the content of the lessons, the materials used in the teaching, and the teaching procedures were all geared to this age level, and were all checked in advance by the intermediate grades supervisor.

It is interesting to consider what might be called enrollment figures. A study guide for the course was purchased from Station KRMA by nearly 2,200 adults. Each pupil in the fourth, fifth, and sixth grades of the Denver Public Schools who said he would view the programs was furnished a set of lesson sheets containing the word lists and similar materials. When the series started, nearly nine thousand youngsters declared their intention of learning French. After the first nine weeks, when a new set of lesson sheets was needed, somewhat fewer than five thousand pupils requested them. It seems, therefore, that relatively independent study of this kind is not for everyone. Yet in fairness to the younger generation it should be said that this proportion of dropouts is considerably smaller than the proportion usual in adult education programs.

Francais, Pour Vous was in a sense an experiment. There had been a growing demand for foreign language instruction in the elementary grades, particularly from those working in the field of education for the gifted. Since it would be difficult to find time for another course in an already full elementary school schedule, television presentation appeared to be a practical way of meeting this demand, if the subject could be taught effectively through this medium. Another

* Mr. Jones was a member of the NEA Conference on the Academically Talented, held in February 1958. He is the author of several novels for teenagers, and a member and past president of the Colorado Authors League.

possibility suggested itself: that a foreign language might be learned in the home setting, where one's native tongue is first learned as a part of family life. So, in launching *Francais, Pour Vous*, we sought to find out:

1. Can children in the intermediate grades learn a foreign language taught by television?
2. Can learning a foreign language be accomplished in a home setting?

In order to answer these two questions it seemed essential to give TV pupils a test that would indicate how much they had learned.

We found very early in the project that no tests in foreign language for nine-, ten-, and eleven-year-olds seem to be available from publishers or from other school systems. Therefore, we have had to build our own examinations.

To do this the planning committee (parents and teachers) selected an examining committee of five expert teachers of French from Denver's secondary schools. The director of Evaluation and Guidance provided them with technical assistance in test construction. There was one conspicuous advantage to this procedure: it was possible to gear the tests directly to the oral–aural method of instruction, which authorities in language teaching, including the teacher for this series, advise is the proper method at the intermediate grade level. There was another advantage: the content of the tests could and did correspond directly with the content of the lessons.

The specific disadvantage was that we had no statistical norms by which to judge the pupils' learning. However, our committee of experienced teachers agreed that a youngster who could respond correctly to about half the items in the test was doing all right.

The committee of five administered the tests, which were given at three different intervals to a sampling of fourth-, fifth-, and sixth-grade pupils who were following the TV series. They were tested individually for proficiency in:

written French
spoken French
pronunciation
functional vocabulary
cultural understanding.

In the preliminary examination, the pupil was queried as to whether he could now speak, read, or understand French; asked questions about French history and culture; and tested for ability to understand some French sentences, words, and expressions which the teacher read to him. He was also asked to write a sentence in French. As expected, very few of the youngsters tested had any background at all in French.

A mid-term examination was given after the first eighteen lessons to measure aural (understanding) and written proficiency attained up to that time. The teacher read a series of French expressions for which the children were supposed to find the equivalent in a written list of English expressions. They were also given a series of pictures and a list of descriptive French words to match. Finally, the pupils were asked to write in French the cardinal numbers from one to twenty, and the French words for six basic colors.

The final examination, given at the end of the course, was more difficult and covered more territory. It measured both oral and aural proficiency, as well as written. Again the teacher read aloud in French—full sentences, more involved than those on previous tests—and the pupils were asked to match these statements with a list of sentences in English. The

test for matching a series of French words with pictures was repeated, and the pupils were asked to write the names of parts of the body in French, on a diagram. In the oral part of the final examination, the teacher asked each child five questions *in French* to which he was to respond *in French*. He was also given some instructions in French to carry out. On both of these phases of the test he was rated individually by the instructor according to an excellent-good-fair-poor scale. As a final part of his written work, the pupil was asked to translate into written French some simple English sentences, and to answer some questions on French history and culture.

Results of the preliminary test, as stated earlier, revealed that the knowledge of French acquired by the pupils tested was negligible. Of 210 tested, only 6 had any comprehension of the meaning of a common French phrase when they heard it read, and only 9, when they saw it written. Forty-eight of the 210 pupils had some knowledge of the country of France, and 75 could pronounce at least one commonly seen French word like *cliché, menu, bon voyage, à la carte*. The results of the preliminary test indicated that in subsequent tests we would be measuring only what had been learned from the televised instruction.

At mid-term 193 pupils were tested. Their median score on the written section was 27 out of a possible 46 points. Seven pupils made a perfect score; forty-four scored between 40 and 45; thirty-four between 30 and 39; forty-nine between 20 and 29; forty-six between 10 and 19; and thirteen between 3 and 9. In the aural phase of the testing—that is, ability to understand spoken French and translate it into English—a score of 10 was possible. Thirty-six pupils attained the score of 10, eight scored between 6 and 9, seventy-one between 1 and 5, and five made a score of 0.

In the final test, 58 points were possible on the written section. Of the 171 pupils tested, one scored between 50 and 58; twenty-one scored between 40 and 49; thirty-two between 30 and 39; fifty-one between 20 and 29; fifty-five between 10 and 19; and eleven pupils made a score between 0 and 9. The median score for the final test—a test stepped up appreciably in difficulty over previous tests—was 22. In the aural phase of the final test (the ability to understand spoken French and to respond), out of a possible score of 10, the median score was 6. Four pupils made a score of 10, ninety-eight scored between 6 and 9, sixty-seven scored between 1 and 5, and two pupils scored 0.

As indicated earlier, in devising the tests for this course and evaluating the results, it was necessary to work without any base of comparison; so, as an experiment, the testing lacks statistical verification. Since French is not taught in the regular curriculum of the fourth, fifth, and sixth grades, there are no control groups; no comparisons are to be drawn between youngsters studying French by traditional methods and those studying through the medium of television. Similarly, no comparisons may be drawn between children in Denver and children in other cities, until schools in other cities launch similar experiments and data may be pooled.

From our own testing, however, we think we have found the answers to our original questions. Fourth-, fifth-, and sixth-grade children can be taught French, and they can be taught it through television. Note that in the results cited above at least half the children had mastered from 50 to 70 per cent of the material. Some had learned a great deal.

Since we had started with the assumption that 50 per cent mastery would be a satisfactory performance, we were not at all disappointed.

As to whether foreign language can be taught children in a home setting, the answer we have found is largely negative. From reasons given for dropouts and from recommendations of people connected with the program, we conclude that a foreign-language course must be school-connected to be effective. Poorest scores were made by children in schools where no follow-up periods were given by a classroom teacher. One of the reasons for dropouts was that parents want the television set for their own favorite programs and not for their child's lessons in the evening.

Television has at least one advantage all its own in the teaching of language: pupils can "see" how a word is pronounced. After the teacher has given a word and repeated it a time or two, the camera goes in for a very tight close-up. This means that the whole screen is occupied by the lips and throat of the teacher and, as she pronounces the word several times more, viewers get a better idea of how the word is pronounced than is possible in a classroom where most pupils are at some distance from the teacher.

Our television teacher for *Francais, Pour Vous* had unusual qualifications: she had received her Bachelor of Arts degree from the University of Paris, had lived in France, and had had previous experience in telecasting. The point is that instruction by a person of such excellent background, a master teacher, can be made available by television—but not otherwise—to a practically unlimited number of pupils. Thus, another of the unique potentials of educational television has been verified through this experience.

A full report of the findings of the Denver testing survey has been prepared for the National Educational Radio and Television Center at Ann Arbor, Michigan, and it is hoped that some of the materials may merit publication. The evaluation program described was financed with the assistance of a grant from the Center. In particular, we hope that other school systems may have a chance to examine our tests and give us assistance in establishing norms.

Meanwhile, we note non-statistical values from *Francais, Pour Vous*. Reports have come that the work of pupils in English classes has improved noticeably since they started trying to put their thoughts into French. This means, according to our hunch, that the youngsters have gained new insight into language structure. French clubs, formerly found in senior high schools only, have sprung up in elementary and junior high schools throughout the city. French conversation has added new zest to the school day. Not only have pupils become aware of French as a living language, but their interest in France as a country has been stimulated, with resulting benefit in the area of the social studies. We anticipate that foreign-language instruction at the elementary school level will enable children to become better language students later, with better understanding of the culture of another country. We also consider the study of a foreign language a necessary enrichment of the curriculum for able and exceptional students, and one which we intend to explore further.

The data that have been assembled from *Francais, Pour Vous*, plus the reactions and recommendations that have come as a result of the course, have prompted us to make plans for more foreign-language study on television for next year. Whether the instruction will be in French or Spanish or a combination

of the two is yet to be determined. Our experience thus far has led us to plan the following changes:

1. The instruction will be given during the school day rather than during the evening, and there will be preparation and follow-up work by a classroom teacher for each lesson. We intend to telecast the lesson between 1:00 and 1:15 P.M. This is a time segment not so much needed for lunch hour these days, with more and more children eating in elementary school cafeterias, and more and more mothers transporting those who still go home for lunch. It is also a time when teachers are already on duty. Another fifteen-minute period will be allotted some time during the school day for discussion of the previous lesson and preparation for the coming one. This time segment will be worked out by individual schools.

2. The television language course will be on an elective basis. It will be offered only to interested pupils whose parents want them to study a foreign language and are willing to work out the necessary time arrangements for it.

3. The content, methods, and materials used will be definitely for fourth-, fifth-, and sixth-grade youngsters, with no effort to encompass the adult viewer.

These ideas have evolved from our experience to date. The fact that we plan to continue the teaching of foreign language through television is in itself a kind of evidence to add to that already assembled from our evaluation of *Francais, Pour Vous.*

Idea and Practice of a Fifth-Year Requirement for Teacher Certification

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PREFATORY NOTE

THIS is the second and concluding article drawn, as explained in the April 1958 issue of THE RECORD, from Dr. von Schlichten's Ed.D. Project report at Teachers College. As before, I have acted as editor without trying to make the author's data current, since I feel confident that no substantial changes in practice have occurred.

Mention ought to be made, however, of the increased discussion and institutional experimentation which have taken place since Dr. von Schlichten concluded his own study (in 1956) with respect to five-year and fifth-year programs for the preparation of teachers. These have been especially encouraged and supported by the Fund for the Advancement of Education. It is instructive to observe to what extent many—though certainly not all—of the ideas underlying these efforts were voiced by professional educators years ago.

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AS THE basis for certification changed from examination and personal judgments of competence to credits received for successful completion of formal training, the matter of the quantity of that training, as measured in years, credits, and courses, has emerged as an increasingly significant issue. In a previous discussion* the genesis and proliferation of formal teacher preparation—the development of the one-year normal school into the four-year teachers college and the entrance into the arena of teacher preparation of the colleges and universities—were noted. Also noted were the growing definition of and differentiation between elementary and secondary certification, together with the emergence of the requirement of the bachelor's degree, representing four years of preparation, as prerequisite to secondary teaching.

The question finally presented itself: Are four years of formal education adequate for the proper preparation of teachers? In some quarters this led to the advocacy in theory, and the requirement in practice, of teacher preparation beyond four years. A consideration of that movement constitutes the subject matter of the present article.

When Cubberley was making his recommendation in 1906 that high school certification be based on "evidence of having completed a full college course," he offered this additional fact:

> California has gone even farther. The number of properly certificated high-school teachers was so in excess of demand

* See article by von Schlichten in April 1958 *Teachers College Record.*

that in 1905 the requirements were raised to include one year of graduate study.[1]

Another significant action occurred in 1905. In that year the National Society for the Scientific Study of Education addressed itself to the question of the preparation of secondary teachers. In answer to the query, What constitutes the ideal secondary teacher? several respondents suggested the desirability of having acquired a master's degree, "some graduate study," or possibly some travel or study abroad beyond the Bachelor's degree.[2] Dexter, one of the authors of the yearbook which the Society published, arrived at the following conclusion after comparing American with Prussian preparation of secondary teachers:

> It is the opinion of the writer that our high-school system can never fully perform its functions nor its teachers attain the status of professional respectability which should be theirs, until they have invested at least four years' time in the academic side of college work, with at least one year's graduate work directed largely to a theoretical and practical study of school problems. This investment of time can only gradually be brought about, but I am convinced that the not very distant future will see it.[3]

From the actions which have just been chronicled we may conclude that both the practice and the public advocacy of the idea of five years of teacher preparation date from at least 1905; that both theory and practice were initially limited to secondary teachers; and that from the outset the proponents of preparation made concrete proposals as to how that time should be spent and what the training ought to be. This latter point has been characteristic of virtually all proposals for teacher preparation beyond the bachelor's degree down to the present time.

Despite Dexter's optimism, it was not until the 1930's—that is, until there was again a general surplus of supply over demand—that the idea of a fifth year was to receive widespread consideration.

In 1932, for example, Brubacher took this position:

> The time is at hand for the next step in teacher preparation. It has even now been taken in California and in the City of Cincinnati. Secondary-school and college teachers should be required to devote a fifth or graduate year to cadet teaching. The four-year liberal arts program, administered with a sound professional spirit . . . will give the desired educational background. The fifth year should be to the teacher what the internship is to the physician.[4]

At the same time, Hill[5] was arguing that five years of preparation for secondary teachers were now both necessary and, in the light of current oversupply, feasible. He advocated a fifth year consisting of aproximately one-third of each of the following components: academic work, intensive study of education, and additional experience in the laboratory school. This, he said, should follow four undergraduate years which should have included twelve hours of professional training, starting in the junior year.

After comparing American with Euro-

[1] Ellwood P. Cubberley, "The Certification of Teachers" The Fifth Yearbook of the National Society for the Scientific Study of Education, Part II (Chicago: The University of Chicago Press, 1906), p. 82.

[2] The Fourth Yearbook of the National Society for the Scientific Study of Education, Part I (Chicago, University of Chicago Press, 1905), Ch. II, pp. 27-48.

[3] *Ibid.*, p. 62.

[4] A. R. Brubacher, "The Teacher-Training Program Re-examined," *Journal of Higher Education*, 3:436, November, 1932.

[5] Clyde M. Hill, "A Five-Year Program for the Professional Preparation of Secondary School Teachers," *Educational Administration and Supervision*, 18:429-33, September, 1932.

pean preparation of secondary teachers, Benjamin, [6] in 1933, advocated five years and offered six "tentative principles around which a coherent [five-year] program may be built," namely,

1. The five-year curriculum should provide a broader educational program than does the present four-year program;
2. It should *not* include a year of graduate training in the sense of increased specialization;
3. Professional education should be no greater in the five-year program than in the present four;
4. The professional education courses should be integrated and improved for the purposes of the five-year curriculum;
5. The five-year program should provide for increased contact with actual school situations;
6. The five-year curriculum should be evaluated as objectively as possible in terms of the quality of its present product.

An interesting rationale for five years of preparation for *all* teachers was offered by Meyers in 1934.[7] If, asked Meyers, education for social reconstruction is what is needed, then what kinds of teachers will be required? The needed teachers, he claimed, must first of all be carefully selected, and must then be given five years of education—this to consist of two years of broad general education followed by three years of professional education in which the general professional element was stressed. It should be noted that this is the first reference to the desirability of having elementary as well as secondary teachers receive five years of preparation.

It is patent that the five-year certification idea early became identified as the good, the necessary, the desirable training of teachers. Because of its close identification with teacher education, therefore, the balance of the present discussion will be conducted largely in terms of the positions taken by various commissions, groups, committees, learned organizations, and the like which have from time to time addressed themselves to the question of the desirable preparation of teachers.

The first findings to be cited are those of the National Survey of the Education of Teachers in 1935. The third volume[8] of that six-volume survey makes numerous specific recommendations with reference to the education of teachers, with this proviso, however: "These proposals and recommendations cannot be defended in terms of noncontrovertible data of the survey nor upon a final word from research." [9] Nevertheless, the authors propose that the pre-service preparation of elementary teachers be increased to four years, and that four years be "the minimum preparation for the lowest class of secondary school in every state that has not yet [1933] made it so," and that

> . . . an early adoption of the standard of 5 years of preparation for the first or highest class of secondary-school certificate in most States is recommended; at least an early beginning in preparing such teachers should be made.[10]

A teachers' curriculum should be an integrated curriculum, [11] says the Commission, with education courses intro-

[6] Harold Benjamin, "The Five-Year Curriculum for Prospective Secondary Teachers," *Educational Administration and Supervision*, 19: 2-4, January, 1933.

[7] Alonzo Meyers, "Education of Teachers for the Schools of Tomorrow," *Journal of Educational Sociology*, 7:569-70, May, 1934.

[8] Earle U. Rugg and others, "Teacher Education Curricula." Vol. III of *National Survey of the Education of Teachers*. United States Office of Education Bulletin 1933, No. 10 (Washington: Government Printing Office, 1935).

[9] *Ibid.*, p. 347.

[10] *Ibid.*, p. 352.

[11] *Ibid.*, p. 353.

duced not later than the junior year.[12] Further, any fifth-year program should be flexible enough to permit numerous possible options to be exercised.[13] These were relatively modest and guarded proposals which did not suggest five years of preparation prior to initial employment, but rather only as a condition for attaining the highest class of secondary certificate "in most States."

Somewhat more specific is the recommendation of the Regents Inquiry of 1938 in respect to teachers in New York State.

> The point has now been reached where the . . . urgency for breadth of education on the part of teachers [makes] it desirable for New York State to adopt . . . a five year program of courses for secondary school teachers.[14]

The Inquiry makes it clear that it is recommending five years as a pre-service requirement for *secondary* teachers.[15] Regarding the nature of such a program it is, however, much less definite. "To insist dogmatically on a rigid formula at the present time and in the present state of experience with respect to the best ways of preparing teachers," it says, "seems to be a mistake." [16]

An interesting and brilliantly presented set of general recommendations emerged in 1942 out of the deliberations of a joint committee of the faculty of Harvard College and the Graduate School of Education, which had initially addressed itself to the problem of the proper preparation of secondary English teachers at Harvard. The committee concluded that secondary teachers, generally, now needed five years of initial preparation, and that the last two undergraduate years and the present graduate year ought to be thought of as a single three-year preparatory program. This, they realized, implied that the teacher candidate would have to think of his future profession prior to receiving his baccalaureate. But they asked,

> Why should the delicate and complex profession of teaching be something that can be entered on hit or miss merely because the candidate decides, after graduation from college, that he would like to teach?[17]

Further, in examining the Master of Arts in Teaching program then in effect at Harvard, the committee arrived at this conclusion concerning what it felt to be an initial fallacy in the whole scheme:

> . . . the fallacy, namely, that training in education is something that can be applied from above at the end of another program; that it is training which in a fifth year can miraculously be clapped on top of a four-year Bachelor of Arts degree without reference to the vocation of teaching. The result is not fusion, but confusion. Skilled teachers are not thus made out of raw material.[18]

Any attempt to delineate the five-year idea must certainly pay particular attention to the findings of the Commission on Teacher Education, whose efforts on behalf of the improvement of teacher education were most certainly unique, and quite possibly the most widespread and significant in the history of teacher preparation in our country. The Commission's point of view was clear: "Teachers adequate for our times cannot be prepared

[12] *Ibid.*, p. 359.
[13] *Ibid.*, p. 363.
[14] Charles H. Judd, *Preparation of School Personnel, A Study of the Regents Inquiry into the Character and Cost of Public Education in the State of New York* (New York: The McGraw-Hill Book Company, Inc., 1938), p. 86.
[15] *Ibid.*, p. 84.
[16] *Ibid.*, p. 88.
[17] Report of a Joint Committee of the Faculty of Harvard College and the Graduate School of Education, *The Training of Secondary Teachers* (Cambridge: Harvard University Press, 1942), p. 125.
[18] *Ibid.*, p. 124.

in less than four collegiate years," [19] and further,

> The Commission sympathizes with the tendency toward the establishment of five-year programs of teacher preparation and considers them to be as justifiable in the case of elementary as of high school teachers.[20]

That justification, says the Commission, lies in the twin reasons of the social significance of the teachers' function and of the complexity of understanding and skill required. The ideal training program, it holds, "would be a five-year integrated program in which the professional and other elements were continuously intermingled." [21] It warns against relegating all professional elements to the fifth year, recommends that in all cases professional training be started no later than the third college year, and holds that any increased term of training "requires increased provision of opportunities for direct and responsible experience with children, schools, and communities." [22] Finally, the Commission makes clear that it posits no virtues in five years of preparation per se apart from improved selection and more effective programs.

From time to time various professional organizations and learned societies within the field of education address themselves to the question of the proper qualification and preparation of teachers. In considering the theme of the expanding role of education, the American Association of School Administrators in 1948 dealt with the question of personnel to insure an adequate program.[23] This association, too, thinks of adequate teachers in terms of competencies,[24] and after paying its respects to the Commission on Teacher Education's recommendations for improving the pre-service education of teachers, states the following as its position:

> The minimum educational qualification for any teacher (elementary or secondary) should be the bachelor's degree for initial or provisional certification, with an in-service education requirement of additional work toward completion of the master's degree for permanent or standard certification. . . . However, appraisal procedures which will more adequately describe the competencies of teachers . . . must also be developed.[25]

It will be noted that these administrators, following the lead of the Commission on Teacher Education, do not differentiate between elementary and secondary teachers as to the length of either their initial or their ultimate preparation for teaching. Further, it is important to observe, they favor the acquisition of a fifth year of preparation for all teachers on an in-service rather than a pre-service basis. And finally, they are concerned with the acquisition of needed competencies by *all* teachers.

In its 1953 yearbook the National Society for the Study of Education also deals with teacher preparation as one aspect of the problem of adapting the secondary school to the needs of youth.[26]

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[19] *The Improvement of Teacher Education, A Final Report by the Commission on Teacher Education* (Washington: American Council on Education, 1946), p. 113.

[20] *Ibid.*, p. 104.

[21] *Ibid.*, p. 105.

[22] *Ibid.*, p. 106.

[23] "Personnel for an Adequate Program," *The Expanding Role of Education.* Twenty-sixth Yearbook, American Association of School Administrators (Washington: American Association of School Administrators, 1948), Ch. X.

[24] *Ibid.*, pp. 231-32.

[25] *Ibid.*, p. 236.

[26] J. G. Umstattd, "Education of Teachers to Meet the Needs of Youth," *Adapting the Secondary-School Program to the Needs of Youth.* Fifty-second Yearbook, Part I, National Society for the Study of Education (Chicago: University of Chicago Press, 1953), Ch. XV.

For the success of the kind of high school program envisaged by the authors of that yearbook, in view of the learning and skills demanded of a teacher in such a school, "It is [very] doubtful," says the Yearbook, "that the teacher can become prepared for this job in four years." [27] It calls for five years of preparation, a five-year program organized as a unified series of general and professional experiences. "Simply to tack on a fifth year of work unarticulated with the previous four years will not do the job." [28]

One type of fifth-year work which the Yearbook strongly recommends is the internship. This is not only desirable, but also practically necessary under present circumstances.

> The failure of public schools to develop superior programs of in-service education for beginning teachers suggests the need for a period of internship under the guidance of the college to facilitate the induction of its members into the profession.[29]

Still another source of opinion concerning the desirable length of preparation of teachers, and hence of desirable certification requirements, is to be found in the pronouncements of those concerned with the several subject matter fields. The position of a Harvard committee on secondary English teachers already has been discussed. Several more positions will now be presented.

In 1949, Layton addressed himself to an analysis of certification requirements for mathematics teachers.[30] After tabulating the data concerning the subject matter and professional course requirements then in effect for certification in mathematics teaching, he turned to two groups of experts, state certification officers and mathematics specialists, for judgments on a number of relevant questions raised by his analysis.

According to Layton's data, the state certification officers consistently favored higher certification requirements than did the mathematics specialists. However, both groups overwhelmingly favored only a bachelor's degree for elementary teachers, and only a minority of both groups favored requiring a master's degree for secondary mathematics teachers. It is noteworthy that a larger minority of certification officers than mathematics specialists took this position. For both groups, however, the concern was for the nature of the teacher's preparation rather than for a master's degree or a fifth year per se.[31]

In the summer of 1953 a month-long conference on science teaching in the secondary schools, called by President Conant and supported by the Carnegie Corporation, was held at Harvard University.[32] Among many other things the conference reviewed some twenty reports published during the previous two decades, and found concurrence on seven general recommendations concerning the adequate preparation of science teachers. "These," said the conference, "might well be considered by those attempting new steps in the development of teacher certification requirements and teacher training programs." [33] Examination of those seven recommendations reveals that they call for competence in the fields to

[27] *Ibid.*, p. 288.
[28] *Loc. cit.* [29] *Loc. cit.*
[30] William Isaac Layton, *An Analysis of Certification Requirements for Teachers of Mathematics* (Nashville, Tenn.: George Peabody College for Teachers, 1949), 215 pp.
[31] *Ibid.*, pp. 184-88.
[32] Fletcher Watson and others, *Critical Years Ahead in Science Teaching* (Cambridge: Harvard University Printing Office, 1953), 48 pp. [33] *Ibid.*, p. 37.

be taught and in professional education, including realistic experiences in school and community, together with broad general education. There is agreement, too, that "the five-year college training program for teachers [should] become a mandatory minimum." [34]

When the conference presents its own thinking over five years, as it does immediately on the heels of the seven recommendations just referred to, a certain vagueness intrudes itself. However, one gathers finally that the conference favors five years of preparation, but not necessarily as a condition for entrance into the field, and that it recognizes certain practical problems but offers no remedies.

Concluding the present phase of our inquiry, the desirable preparation of teachers in the several subject matter areas, we turn finally to the field of the teaching of the social studies. In its twenty-third yearbook the National Council for the Social Studies deals specifically with the preparation of the social studies teacher, but raises the question of the adequacy of the status quo only to this extent: "Is the present college preparation adequate for providing the core curriculum teachers that the public schools want?" [35]

Still another source of opinion on the question of five years of preparation is to be found in the judgments of some two hundred "persons interested in teacher training," as gathered in a questionnaire study conducted by McGrath.[36] A number of findings pertinent to our inquiry follow:[37]

Question Number		*Yes*	*No*	*Not Sure*
4	Do you think it is possible to plan pre-service programs which will adequately train and educate teachers in four academic years of time?	5	141	4
26	Do you favor a five-year minimum of pre-service training before teachers are permitted to teach?	171	25	4

Respondents were asked to score a series of statements on a 1 to 5 scale representing a range from strong disagreement to strong agreement. One statement and its composite rating are relevant.[38]

		Rating
B 26	A year of internship with small remuneration should be a part of the pre-service training of teachers.	4.21

The points of view of respondents—persons involved in the actual preparation of teachers—are clear. Those persons do not believe it possible to devise adequate pre-service programs limited to four years for either elementary or secondary teachers. They overwhelmingly favor five years of pre-service preparation, and they equally strongly favor a year of internship with some salary.

A recent position, and one to which any study such as the present one must surely pay attention, is that of the Commission on Teacher Education and Professional Standards of the National Education Association. That Commission clearly stated its views on years of preparation for certification when it recom-

[34] *Ibid.*, p. 38.

[35] Jack Allen (ed.), "Preparation of Secondary School Social Studies Teachers," *The Teacher of the Social Studies.* Twenty-third Yearbook, National Council for the Social Studies (Washington: The National Education Association, 1952), p. 73.

[36] G. D. McGrath, "Some Results from a Teacher-Education Questionnaire," *Educational Research Bulletin,* 29:14-29, January, 1950.

[37] *Ibid.*, pp. 14-17.

[38] *Ibid.*, p. 28.

mended to the Association's National Convention of 1953 that

> The profession support vigorously the principle of requiring minimum professional preparation of the baccalaureate degree for initial certification and teaching service; *and that the fifth year of preparation, completed in connection with actual teaching experience, be considered as necessary for the full professional preparation of teachers at all levels.*[39]

The present investigation of positions with respect to a five-year requirement concludes with the presentation of a recent point of view expressed by one individual, Hutson,[40] who writes what he says may be regarded as an open letter to the members of the National Society of College Teachers of Education. Basing his thinking on what he regards as the fact that the five-year requirement is here and that "the nature of the fifth year is not defined by the state or the school district," Hutson proceeds to raise and answer a critical question,

> Do teachers perform at a higher level with a master's degree than with a bachelor's, and if so, to what extent? No one knows. No one has tried to find out. But in the logic of the situation there is much cause for skepticism. . . .[41]

He then proceeds to indict the efficiency of present fifth-year training on three counts, namely,

> First, there is seldom any co-ordination among the teachers of a given school in fifth-year programs of self-improvement;
>
> Second, . . . present fifth-year education is illogical because of the remoteness of connection between tutelage and practice;
>
> Third, the present program is illogical in that it lacks relation to the beginning employment of the teacher.[42]

By way of constructive suggestion Hutson does not, somewhat surprisingly, first call for an investigation of the relative performances of teachers with four and five years of preparation, but launches immediately into a presentation and defense of what he calls a new program—a fifth-year program organized around a teaching practicum. Students would be hired as half-time teachers in selected schools, concurrently carrying certain related course work at a university, all of this leading to a practitioner's rather than an academic master's degree.

Summary

This brings to a close the presentation of the thinking concerning the idea of requiring five years of preparation for certification. The following conclusions appear to be warranted:

1. Both the practice and the idea of requiring five years of preparation for certification may be traced to the start of the present century.

2. Over the years opinions regarding the idea of five years of preparation have been expressed by individuals who have a legitimate concern in the problem; by numerous professional societies representing various groups, such as the profession as a whole, school administrators and subject-matter specialists; by committees appointed for the express purpose of considering the preparation of one or another category of teachers; by two commissions charged with dealing with teacher preparation on a national basis; by groups of specialists in various fields—subject-matter specialists, certification of-

[39] National Education Association, *Addresses and Proceedings*, (Washington, D. C.: National Education Association, 1953), p. 318. Italics not in original.

[40] P. W. Hutson, "A Proposed Program for the Fifth Year in Teacher Education," *School and Society*, August 7, 1954, pp. 37-40.

[41] *Ibid.*, p. 38.

[42] *Ibid.*, pp. 38-39.

ficers, persons concerned with teacher training—and by the professional organization most singularly concerned with certification standards, the Commission on Teacher Education and Professional Standards.

While there is by no means unanimity on the ideas concerning five years of preparation, there is no body of evidence or polemic in the literature which argues actively *against* the five-year idea on positive grounds. There exists, to be sure, a considerable body of articulate opinion critical of teacher preparation. Lynd's *Quackery in the Public Schools* and portions of Bestor's *Educational Wastelands* may be cited.[43] That body of opinion is critical not so much of the number of years of teacher preparation, however, as it is of its content. In fact, one can find considerable support in the present critical literature on teacher preparation for more preparation for teachers if only it were of the "right sort."

3. Initially five years of preparation were proposed for only secondary teachers. There is, however, a growing body of opinion which would not differentiate between elementary and secondary teachers, proposing five years for both. Certainly, there are no recommendations in the literature that five years of preparation be demanded of elementary but not of secondary teachers.

4. The dominant reason offered in justification of the proposals which have been made is that the needed skills, knowledge, and understanding now require five years for their acquisition or development. Sometimes this is made as an unsupported assertion, sometimes it is preceded by a more or less detailed analysis of competencies, skills, and the like which the particular authority holds lead to the five-year conclusion. Other reasons offered at various times have been feasibility due to oversupply of teachers, and lack of proper in-service training programs. In no case, however, has evidence been adduced to indicate that teachers with five years of preparation have in fact been proved superior to those with less preparation.

5. With a few exceptions, sources of opinion on the length of training cited in the present investigation did propose, with varying degrees of specificity, the structure of the educational programs needed to fill the time span they favor.

From those proposals a number of generalizations can be drawn. First, all who mention the matter at all are explicit that a fifth year cannot simply be imposed upon four years of college studies. Rather, five years of preparation need to be articulated within themselves and in relation to what follows. Second, the proper preparation of teachers (over any given number of years) must include among its components broad general education as a foundation, and specific subject-matter competence, knowledge of the child and of the community, professional education, and relevant direct experiences with children, schools, and communities. Third, graduated professional training and experience should start no later than the junior undergraduate year and should continue right up to initial full-time teaching. And finally, it is felt to be particularly imperative that firsthand experience in school and community continue during, and not be interrupted by, any fifth-year program. Those who advocate internship as the desirable fifth-year program would, of course, increase such experiences by the largest amount during that period.

[43] Albert Lynd, *Quackery in the Public Schools* (Boston: Little, Brown and Co., 1950), 282 pp., Arthur E. Bestor, *Educational Wastelands* (Urbana, Ill.: The University of Illinois Press, 1953), 195 pp.

6. Analysis of the data which have been presented reveals that opinions are mixed regarding whether five years of preparation should be required prior to initial entrance into full-time teaching or simply as a condition of full and final certification. Some of the authorities are unclear as to their exact positions. Some are explicit in urging that five years be required for initial certification. Others imply that position by the nature of the training programs which they advocate. Still others hold only that a fifth year should be required as a condition of receipt of the highest or full or final certification.

7. Finally, one gathers the general impression that those who argue for this or that number of years of preparation for one or another category of teachers according to this or that plan of organization are not concerned nearly so much with the mere acquisition of credits, degrees, or years of training as they are with the desire that somehow teachers be as well prepared as possible, in terms of competencies, for the jobs that need to be done. Length of training is not to be considered apart from the goals to be achieved and the means for achieving them.

THE FIVE-YEAR REQUIREMENT IN PRACTICE

When one examines actual state certification regulations in terms of their requiring more than four years of preparation for teaching, the resultant data are at first deceptively simple. It is revealed that no state requires more than four years for entrance into elementary teaching, and that in forty-four states no preparation beyond four years is required for entrance into secondary teaching. In the remaining four states and the District of Columbia there are, then, some additional academic requirements for initial entry into some phases of secondary teaching. Those requirements by states are: Arizona, 6 hours, for academic teachers only; California, 30 hours, for academic teachers only; New York, 30 hours, for academic teachers only; Washington, fifth year, for out-of-state teachers; and District of Columbia, master's degree for all except vocational high school teachers.[44]

It should be noted that in three of these states the post-baccalaureate requirement does not apply to teachers of nonacademic subjects. In the District of Columbia it does so apply, but only in the case of teachers *not* assigned to vocational high schools. Even teachers of academic subjects so assigned need hold no more than the bachelor's degree. It should also be noted that in Arizona the number of hours of preparation called for is 6. While renewal requirements have the effect of building these up to 30 over the first five years of teaching, this does not distinguish Arizona from many other states, as will appear below. Washington's initial five-year requirement is limited to secondary teachers from out of state. The picture as a whole can scarcely be considered impressive, especially when it is recalled that California took the first step as far back as 1905.[45] It must be added that no significant body of research has resulted from the five-years-of-initial-preparation requirement which provides evidence as to whether or not this requirement has produced better teachers.

The state minima which have just been examined are requirements for *entrance* into teaching only. However, further in-

[44] Data drawn from *A Manual on Certification Requirements for School Personnel in the United States* (Washington: National Education Association, 1953), pp. 22-133.

[45] The District of Columbia acted in 1933, New York in 1943, and Washington in 1951.

spection of certification regulations reveals that the several states also have periodic renewal requirements, or at least furnish opportunities to achieve higher level certificates, and that those additional specifications must or can be met by additional study. In view of this, it is pertinent to ask, How much education beyond four years must a teacher obtain in order to *remain* a teacher for life? Such an analysis of state certification data does not appear to have been made up to the present time. It will therefore be the task of the remainder of this discussion to present the results of such an analysis.

In order to compile these data it was necessary to make an assumption regarding the span of years to be covered by the term "for life." For the purposes of the calculations made in this study it has been assumed that a professional lifetime begins at age twenty-two and ends at age sixty-five, having covered forty-three years. The problem becomes, then, that of determining how much study beyond the bachelor's degree would, under regulations existing in 1953, be required in each of the several states if a teacher were to be permitted to remain in teaching throughout such a professional lifetime. The findings are summarized in four categories below.[46]

1. *Study beyond four years* REQUIRED *to teach for life.* Thirteen states require 30 or more hours of study in order to teach for life, making no distinction between elementary and secondary teachers. The range of required hours is from 30 in Mississippi, Rhode Island and Washington, to 48 in Delaware, North Carolina, and Florida, with New Hampshire, Arizona, Maryland, Georgia, South Carolina, Utah and Vermont falling in between. Six additional political units require 30 hours or more, but on the secondary level only. In five of those—Kentucky, Ohio, West Virginia, Wyoming, and the District of Columbia—the requirement is for the master's degree, and in the sixth—California—for 30 hours of study. Finally, there are two special cases, Maine and New York, which require 48 hours or more on the secondary level, and also require some study beyond four years, but less than 30 hours, on the elementary level. In summary, then, it may be said that twenty-one states require a total of five or more years of study of their teachers—elementary or secondary or both—in order to teach for life, with a majority of those states making no distinction between teaching levels.

Eight other states require some study beyond four years, though not to the extent of a full fifth year, the range being from 24 to only 6 hours. Five of those states—Iowa, Virginia, Michigan, New Mexico, and Pennsylvania, to name them in descending order of number of hours required—make no distinction between teaching levels, while the remaining three —Nebraska (18 hours), South Dakota (18), and Nevada (6-9)—have requirements for the secondary level only.

2. *Study beyond four years* ENCOURAGED *by regulations.* Still another way of examining the practice relating to five years of education for teaching is to analyze certification regulations in terms of the amount of study which they encourage but do not necessarily require. The stimulus for such additional study is promise of receipt of the highest certificate which the state offers. These certifi-

[46] For full details see Erwin W. von Schlichten, "A Study in Teacher Certification: The Story of the Five Year Requirement in New York State." Unpublished doctoral project report, Teachers College, Columbia University, 1956.

cates, which are not essential for continuous teaching but which are presumed to give special prestige, bear such titles as Advanced Post-Graduate (Florida), Class A Professional (Alabama), and Advanced Professional (New Jersey). Fifteen states offer such inducements, one (Florida) calling for two full years of study beyond the bachelor's degree for both elementary and secondary teachers. Eight states—Alabama, Illinois, Indiana, New Jersey, Tennessee, Virginia, Idaho, and Iowa—require either a master's degree or 30 hours for the highest certificate at either level; three—Kentucky, West Virginia, and Wyoming—offer such an inducement on the same terms to elementary teachers (in all of these three, it will be recalled, secondary teachers *must* earn a master's degree if they are to continue teaching indefinitely); and one, Montana, to secondary teachers. One state, Nebraska, grants its highest certificate to elementary teachers after 14 hours of fifth-year work. (It *requires* 18 hours for secondary teachers to maintain their standing.) Finally, one, Kansas, encourages teachers on both levels by offering a highest certificate at the price of 6 to 8 hours originally and for each renewal.

3. *Study beyond four years* ACCEPTABLE AS AN ALTERNATIVE *to teaching experience.* In seven states, where certificates must be periodically renewed, such renewal is automatic in the case of teachers where service has been continuous, or relatively so. Alternatively, however, renewal will be granted on the basis of study beyond the basic four years. This situation obtains in Alabama, Arkansas, California, Minnesota, and Mississippi on both elementary and secondary levels, in Kentucky on the elementary, and in Oregon on the secondary level.

4. *States with* NO PROVISIONS *relating to study beyond four years.* We come finally to that residue of nine states which simply do not mention study beyond four years in any manner in their regulations governing teacher certification. Those states are Colorado, Connecticut, Louisiana, Massachusetts, Missouri, North Carolina, Oklahoma, Texas, and Wisconsin.

Summary

Our investigation of the practice of requiring five years of study for certification as a teacher has been conducted on two levels. First, the requirement of five years of study *for entrance* into teaching was examined. This was found to be a limited movement. Second, the requirements *to teach for life* were analyzed, with the results which have just been recapitulated. The practice of requiring five years of education for teaching is indeed widespread in the United States.

Furthermore, the evidence reveals that there is considerable disparity between the *idea* of a fifth year of preparation as developed in the first part of the present article and the *practices* as revealed in the second part. The proponents of the idea of five years of preparation stress integration with the previous four years, a full five years before starting to teach, a fifth year internship, and the like. In actual practice the number of states mandating a fifth year of initial preparation is negligible. Rather, the pattern of certification requirements frequently is such that a teacher must continue to accrue advanced credits periodically (six credits for every five-year renewal period is a recurring example), in order to maintain the validity of his certificate.

The result is the phenomenon, peculiar to the field of education, of a large body of teachers taking courses during the

teaching year or during summer vacation periods, frequently at intervals of several years, and frequently, too, over a span of years which reaches to retirement—all of this in the interest of meeting certification requirements. The resultant collection of courses is not necessarily the homogeneous, coordinated program envisaged by many advocates of five years of teacher preparation. This is not to argue the relative merits of five-year theory and five-year practice. It is merely to indicate that differences do exist between the two, differences which are understandable in part, at least, in terms of the imperatives placed on teachers by certification requirements.

CONCERNING AN ERROR IN THE MAY, 1958 ISSUE

William H. E. Johnson, author of the article entitled "Recent American Interest in Soviet Education," which appeared in the May 1958 issue of TEACHERS COLLEGE RECORD, wishes to point out that he erred in designating Alexander G. Korol as merely the editor of the recent volume *Soviet Education for Science and Technology*. Mr. Korol is the author of this volume, and should have been so described in the article.

REVIEWS

"Education and Philosophy." *The Year Book of Education, 1957*, edited by George Z. F. Bereday and Joseph A. Lauwerys. Prepared under the auspices of the University of London Institute of Education and Teachers College, Columbia University. Yonkers-on-Hudson, World Book, 1957. 578 pp.

How can one write an adequate review of a scholarly work with some forty-five contributions dealing with widely varied subjects loosely combined under the heading *Education and Philosophy?* If one searches for a common denominator, he is in danger of vague generalizations. If, on the other hand, one selects individual essays, he does injustice to contributions equally good and important. The best solution may be to enumerate first the principal sections of this nineteenth issue of the *Year Book of Education*, latest of a series of publications that have been a source of inestimable value for the internationally interested educator, and then to comment briefly on the work as a whole.

The first section, for which we have to be grateful because of the lack of historical consciousness among so many educators and social scientists, tells us of the "Great Traditions" in Europe, Islam, India, and China. (Would not the USSR—which now develops into a new Eurasian culture block—have deserved a special article?)

Section II deals with the "Determinants of Policy"; it includes an essay on nationalism by I. L. Kandel and five other articles concerning which I ask myself whether the editors have made any attempt at coherence. For Kandel's essay is followed by essays on "Christian-National Education in South Africa"; "Experiency"; "The Impact of Psychology on Education"; "Theory and Practice"; and, at the end, "The Basic Faith of the New Education Fellowship," which, as many people will be glad to hear, still exists.

Section III discusses "National Systems." Frankly, here I am puzzled. In a book of almost 600 pages, bearing the title *Education and Philosophy*, I would have expected a description of the national systems of the major nations. Instead, I am confronted with an article on "The English Public School" and one on the merits of Sir Robert Morant in regard to English educational administration, as if that were all to be said about the English national system with its gigantic development since 1870. The following two essays on "The American Common School" by Cremin and "The American College" by Fretwell are the only ones within the whole group which deal comprehensively with what the heading of the section promises. The two succeeding articles on the "Roman Catholic Colleges of Quebec" and "Basic Education in India" again deal only with segments of Canadian and Indian education; and the last article on the "Philosophy of UNESCO" hardly belongs to the section at all since, as the author himself points out, it is one of the basic ideas of UNESCO "that educational, scientific and cultural activities will themselves be enriched by transcending national boundaries." UNESCO, after all, is an international and not a national organization. This, however, is a minor point. The major point is the omission of so many nations about which the reader would also like to hear. No one, of course, would expect completeness, but other representative examples would certainly have been welcome.

Section IV discusses some "Historical Examples," e.g., "The Forest Universities of Ancient India," "The Jesuit Schools," "The Philosophy of Enlightenment and Basedow's

Philanthropin." This is all interesting, but I miss any line of development and cogency of organization in this part of the book.

Section V deals with "Experimental Institutions." We must welcome the fact that eight courageous enterprises in the field of education will now be better known and perhaps serve as examples to others. We should hear more about such pioneering work. I might remark, however, that Bennington College is not the only institution in the United States with a new conception of college education. For instance, I would like to have seen Goddard College included, thus providing two examples of vanguards which, though different from each other, dare search for new horizons of living and learning for our youth.

Finally, Section VI discusses "The Teaching of Philosophy of Education." It deals with certain aspects in the United States, England, Australia, and France, and ends with an essay, "General Conclusions," by Kingsley Price. All these articles make worthwhile reading, but would not the heading "The Teaching of Philosophy of Education in *Some* Countries" have been more apropos? Why, for example, is Italy omitted with the conflict between its liberal and its ecclesiastical traditions? Or Germany? Its universities already attract more than eight thousand foreign students, mainly in the field of the humanities—to which, from my point of view, education belongs.

Here is the strange dilemma. On the one hand, I am overwhelmed by the magnitude and multitude; on the other hand, reading the titles of the six sections, I feel that I receive too little. As already indicated, once one has decided to speak about "determinants of policy" or about "national systems," one should understand the task more comprehensively and show at least the main contours of the picture.

I raise this issue because it seems to me of some universal interest. There appear now more and more *Sammelbände* volumes with thirty to fifty articles between two covers. In regard to the United States, I think particularly of the various, and generally excellent, symposia of a conference on science, on philosophy, or on religion. But the mass suppresses the individual work; and the meditative mind, which likes to concentrate, shrinks from the fair with too much merchandise. Though this kind of mind may be old-fashioned, it still is the only source of intellectual creativeness we possess. And, in the case of the volume under review, I believe that less might have been more. Even the excellent Introduction by Lauwerys and Holmes fails to provide the sense of unity one looks for in reading a book. The arrangement of the old *International Yearbook of Education* under the editorship of I. L. Kandel was, from my point of view, preferable. And since, unfortunately, it is no longer published, there is no reason why its form of organization could not be taken up by the new English-American enterprise: namely, thorough dedication to one significant topic.

In no way should my remarks be understood as a negative criticism of the book in its entirety. Like most publications of this kind, it contains articles of different value; some of great, some of minor interest because merely descriptive and without much effort to place the topic under discussion within a wider context. But nowhere has one the feeling of amateurishness or unreliability. It is a rich source of information, not only for the student of comparative education, but also for the historian of human culture.

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Pioneers of Popular Education 1760-1850, by Hugh M. Pollard. Cambridge, Mass., Harvard University Press, 1957. xii + 297 pp. $5.50.

This book is a study in comparative educational history. Its primary object, as Dr. Pollard declares in his preface, "is to show how Great Britain, during the first half of the nineteenth century, benefited from pedagogical ideas imported from Europe and

ultimately sought ways and means of establishing herself, alongside Switzerland, Holland and Prussia, as a champion of educational reform." The material for this is, first, an account of the work of such educational pioneers as Pestalozzi, de Fellenberg, Wehrli, and Girard, and the development of state systems of education in Holland and Prussia; and, second, the impact of these ideas and experiences upon British educational reformers such as Robert Owen, Lord Brougham and Kay-Shuttleworth. Prima facie this would seem to be a novel and rewarding field of investigation, and Dr. Pollard has certainly rendered valuable service in showing the possibilities in this type of approach. An evaluation of the book raises two interesting problems: the validity or usefulness of such comparative studies, and the historical methodology appropriate to them.

Dr. Pollard is concerned to show how, after a poor start, Britain was enabled, through a series of educational reformers in the first half of the nineteenth century, to "take her rightful place" alongside other European countries as a pioneer in the educational world. English primary education, wedded until the mid-thirties to the Bell and Lancaster monitorial system, lagged behind Dutch and Prussian public education which had absorbed the progressive educational ideas of the Swiss reformers. From this lamentable state the English were rescued by the vision and work of a small band of pioneers who turned to Pestalozzi and de Fellenberg for their inspiration, and to Holland and Prussia for practical models to copy.

The assumption here is that English education was "backward" because of a failure to learn from the continental educational reformers. But such an interpretation surely neglects unduly the social basis of education. In any case, one of the English pioneers, Robert Owen, whom Dr. Pollard cites, developed his experimental schools at New Lanark without any foreign influence; he apparently originated them himself from his theory of character and environment. Yet, although admiring visitors came from all over the world to see the New Lanark experiment, it was no more generally accepted as a pattern for English education than were the ideas of the Swiss reformers. Instead, socially minded Englishmen turned to the Bell and Lancaster system for their inspiration. They did this primarily not because of ignorance of other methods (no propaganda at the time was more prolonged and widespread than that of Owen) but because the monitorial system harmonized more completely than any other with the dominant social philosophy of the day. The Bell and Lancaster ideal was the nearest thing to an educational factory that had yet been devised. The fundamental objection to the adoption of Owenite educational methods was not that they would not work, or were utopian (New Lanark effectively disproved that), but that they were based on principles inimical to the new individualist-industrial society which was developing so rapidly. Contemporaries sensed, rightly, that Owenite education was subversive of, or at least irrelevant to, the kind of society they were building. By the same token, the continental experiments and systems appealed hardly at all in the turmoil of creating the workshop of the world. The respective institutions and ideas were simply on separate tracks which did not meet. Comparison of the two at this level and in this period is therefore interesting but of only limited significance.

A tiny minority of Britishers, however, were concerned with an alternative to the prevailing educational provision or lack of it; and it is this fascinating collection of educational nonconformists whom Dr. Pollard has gathered together in the second half of his book. Here the problem of historical method becomes acute; what is it we are trying to find out, and how are we going to do it? This book presents selected biographical details of each of the characters concerned (Lord Brougham, J. P. Greaves, Rev. Charles Mayo, Lady Noel Byron) and shows how each was affected by the work of one or more of the continental reformers. What

we are not shown is what all this amounts to. The big question here—which Dr. Pollard does not raise—is why, despite the work of the reformers, the main stream of English education in the nineteenth century was so little influenced by their work and theories. An answer to this is only possible if the problem is envisaged in wider terms than Dr. Pollard allows himself. The English pioneers need to be examined in terms of their social references, particularly their various interpretations of radicalism. It is not sufficient "before discussing Robert Owen's tour in detail . . . to note that, by 1816, he had acquired great fame both as a social reformer and educational pioneer." The educational position of the English reformers was so closely tied in with their various social philosophies that the one is only to be explained in terms of the other. The significance of James Pierrepoint Greaves ("the Sacred Socialist") and his experiment at Ham Common, for instance, has to be dug out of obscure communitarian periodicals of the early forties. *Howitt's Journal*, local temperance magazines, and the press reports of local groups of associationists in the forties are the sources from which the dynamics of this early educational progressivism must be quarried. Dr. Pollard has sign-posted us to a very inviting path; one can only regret that he has not taken us further along it.

J. F. C. Harrison
University of Leeds

The Social System of the High School, by C. Wayne Gordon. Glencoe, Illinois, The Free Press, 1957. xi + 184 pp. $4.00.

Ever since Willard Waller described the school as a "closed system of social interaction" having a culture that is definitely its own, sociologists and educators have been interested in the nature of that interaction. Such was the purpose of Wayne Gordon's research on the social system of the high school.

In publishing this study, The Free Press has made available both the complete data of the study and the research methodology used, and in doing so has made a sufficient contribution. The results of the study and the ideas involved have, of course, been known for some time. Dr. Gordon reported on the teacher-roles section in a paper read to the American Sociological Society in 1954 (subsequently published in the *Journal of Educational Sociology*, September 1955); and Dr. Wilbur Brookover of Michigan State summarized the pertinent ideas concerning the student social structure in his book, *A Sociology of Education*, published in 1955.

Thus the present significance of this volume is in the examination of the details and the methodology, for here can be found an interesting use of a combination of sociometry, cumulative school records, and "participant observer" notes. Dr. Gordon confirmed his hypothesis that the social behavior of students is related to the status position they hold in the informal social structure of the school. He admits the difficulty in determining the degree of influence on behavior of this status position, but suspects that, although Hollingshead established the considerable influence of social class on status, the indeterminate factor of individual personality also has significance.

In these days when everyone is concerned over the "molding of our youth," it is Dr. Gordon's conclusion that the informal social organization (nonadult) is probably *the* molding agency, and that adult influence on that subsystem is mostly coincidental. Certainly further research on the communications between the adult and adolescent social structures seems to be implied.

Donald R. Thomas
University of Wisconsin

The American Two-Year College, by Tyrus Hillway. New York, Harper & Brothers, 1958. xi + 276 pp. $3.75.

At no time in our history has the subject of higher education received as much atten-

tion as it is receiving today. And in this field the community college idea is the liveliest, most talked about topic. During the last year for which enrollment figures are available, some 869,720 students were served by the institutions reported in the American Association of Junior Colleges' *Junior College Directory*, 1958. In this total were represented slightly more special and adult students than regular freshmen and sophomores. This is one of the strengths of the two-year colleges in America—they represent a variety of institutions and they serve a wide range of students by providing comprehensive programs.

A book devoted to a description of these colleges is indeed timely and welcome. Tyrus Hillway has set as his purpose "to supply a comprehensive and understandable picture of the American two-year college in compact, readable form." (p. x) He identifies his readers with the statement "The present book has been prepared not only for those who already have a speaking acquaintance with junior and community colleges, but also for those who know nothing or little about them." (p. ix) It is in relation to this purpose for these two reading groups that the book must be judged.

Since the author's purpose is a broad one, it has led him to a broad coverage of his subject, and in thirteen chapters he deals with practically all identifiable aspects. The first four chapters discuss, in succession, the nature, development, goals, and students of the two-year college. In the next seven, the author pairs selected topics: "General and Vocational Education," "Cooperative and Adult Education," "Guidance and Student Welfare," "Student Organizations and Athletics," "Teachers and Administrators," "Legal Status and Accreditation," and "Buildings and Record-Keeping." A chapter on "The Community College Survey" is next, while a concluding section deals with "Problems and Patterns of the Future." Although some of his pairings are regrettable and result in unrelated sections, Mr. Hillway's coverage certainly justifies his previously quoted term "comprehensive."

Coverage in this book is also broad in the sense that the author has included in his description practically all the types of institutions represented in the two-year category: private nonprofit junior colleges, public community colleges, private nonprofit community colleges, technical institutes, university branches, military colleges and theological institutes. He also gives the reader a clear picture of the geographical distribution of our two-year colleges.

Perhaps as a result of the comprehensive purpose which he set for himself, Mr. Hillway has allowed himself to make some unfortunate generalizations. There is space to cite only a few of many instances. Regarding the quality of students in two-year colleges, he contends that "There is ample evidence showing that junior college students compare very favorably with other students." In support of this he gives comparative results for 1943 on the American Council on Education Psychological Examination. He fails to refer to the many studies which show that while junior college student bodies usually include some individuals with abilities equal to the best in other types of colleges, they also include a greater proportion with lesser academic abilities. To this reviewer, this comprehensiveness represents a *desirable* and *consciously sought* characteristic of the community college. Another example of overgeneralizing: the author cites one summary of several studies of transfer students as showing that "junior college transfer students actually demonstrate marked superiority over comparable groups of students who have entered four-year colleges and universities as freshmen." This, to put it mildly, creates a misleading impression.

The author is at times overly optimistic regarding the two-year college movement. For instance, he prophesies that "If present indications can be relied on, the time is not far off when every state interested in the welfare of its young people will have a coordinated system of community colleges."

Of the author's two audiences, those who "know nothing or little" about community

colleges fare better than "those who already have a speaking acquaintance" with them. Little has been written for the first audience, however, and for this group Mr. Hillway has produced a useful work.

RALPH R. FIELDS
Teachers College, Columbia

Behavioral Goals of General Education in High School, by Will French and Associates. New York, Russell Sage Foundation, 1957. 247 pp. $4.00.

The currently sharpened discussions about the functions of education in these United States serve to enhance the contribution made by Will French and Associates in *Behavioral Goals of General Education in High School*. Some years ago this reviewer was impressed by the soundness and usefulness of Luella Cole's contention that the task of the school was to produce the socially adjusted person who knows something. Too many of the present crop of critics of education buy only the second clause in Professor Cole's statement; namely, "who knows something." They seem to fear that a sound program of general education will channel the student's intellectual capacities into the tasks of self-realization and responsible citizenship.

At any rate, it is heartening that this volume "assumes that students are not only expected to know something but are also expected to know how to use what they know and to have a disposition to do so." On this point it quotes effectively from Whitehead as follows:

> The importance of knowledge lies in its use, in our active mastery of it—that is to say, it lies in wisdom. It is a convention to speak of mere knowledge, apart from wisdom, as of itself imparting a peculiar dignity to its possessor. I do not share this reverence for knowledge as such. It all depends on who has the knowledge and what he does with it.[1]

Is it not true that pupils in secondary schools tend to regard as significant to the teacher and the school primarily those matters upon which they are appraised, tested or examined, and which also become a matter of record? Admittedly it is easier to test for the achievement of knowledge than it is to find evidence of some behavioral competence. Yet Will French and Associates have contributed more toward the realization of this latter goal than any other endeavor has to date. They state, "the more specific we can be about behaviors we desire as a result of teaching, the more probable it is that we have made it possible for teachers to identify some evidence, either direct or indirect, of behavioral competence in students." (p. 36)

Part III, "Organization of Proposed Behavorial Outcomes," constitutes, as one should expect from the title, the major part of the report. Here one finds "illustrative behaviors" stated in terms of what may be reasonably expected of superior high school seniors. By reason of his present concern with economic education, this reviewer, using the chart on pages 88-89, checked on the behavioral competencies which are illustrative of "Becoming Economically Competent." It may be asserted with confidence that the "Illustrative Behaviors" found in these pages are pertinent and suggestive to teachers and all those responsible for curriculum improvement in the area of economic education.

The quality of *Behavioral Goals of General Education in High School* speaks for itself. Even so its prestige is reinforced by the fact that the project was proposed by the National Association of Secondary-School Principals, made possible by the aid of the Russell Sage Foundation, and managed by the Educational Testing Service. Advisory help from the American Association of School Administrators, Association for Supervision and Curriculum Development, and the United States Office of Education also adds to the factors which further commend the report. Wide usage by teachers, curriculum groups, and experts in testing is predicted.

GALEN JONES
Council for Advancement of Secondary Education

[1] Whitehead, Alfred North. *The Aims of Education, and Other Essays* (New York, The Macmillan Company, 1929), p. 43.

Legal Aspects of School Board Operation, by Robert R. Hamilton and E. Edmund Reutter, Jr. New York, Bureau of Publications, Teachers College, Columbia, 1958. xi + 199 pp. $4.95.

A big gap in the literature of school law has been filled with the publication of *Legal Aspects of School Board Operation.*

This text and guide views the problems faced by the 200,000 citizens serving on boards of education who are legally responsible for the management of the American public education enterprise. While there has been considerable excellent writing in school law in recent years, this is the first major publication to address itself specifically to the board member.

Robert R. Hamilton and E. Edmund Reutter, Jr., are uniquely well qualified as individuals and as a writing team for the authorship of such a book. Robert Hamilton has developed his experience as a public school administrator, as a practicing attorney, as a law school teacher and dean into keen interest and sound scholarship in the law as it applies to public education. Edmund Reutter is a developing leader and thinker in the area of school administration. From their respective vantage points—Dean Hamilton from Laramie's altitude of 7200 feet, and Dr. Reutter from Manhattan's skyscrapers—they have surveyed the legal framework of the American educational scene and have missed nothing of significance. The book covers these major areas: the legal structure of the local school board; the authority of school boards in relation to pupil personnel, curriculum, employed personnel, school property and school funds; contractual authority of school boards; school board membership and meetings; school board procedure; and liability of school districts and board members.

The citations at the end of each chapter, covering some 300 leading cases involving education which were heard in courts of record, will be helpful to those seeking more specific information regarding certain decisions. The date of each case is given.

While the book is non-technical in nature, the authors do not hesitate to use legal terminology. But the legal terms should not prove difficult for the lay reader even in the absence of a glossary, since the authors define them as they are introduced.

Law is always a specific thing, and a book such as this is not meant to substitute for a study of constitutional provisions, statutes, court decisions, and appropriate administrative rulings. However, study of the book will provide board members and administrators with a frame of reference and indicate the prevailing legal patterns as they exist throughout the country. What is perhaps most important, it will help an individual understand the philosophy of the law as it applies to education.

Board members will find Chapter VII, "Contractual Authority of School Boards," of particular significance. The chapter opens with a brief description of the essential elements of a contract. It discusses both personnel and non-personnel contracts. It describes legal processes involved in contracts, and discusses liquidated damages, "contract-jumping," and the application of board regulations to teachers' contracts.

School board members reading this book will understand that they are not officers of a local district but of the state. They will understand the distinction the law makes between "reasonableness" and "wisdom" in board procedure. They will learn that their board membership gives them no advantage over any other citizen in the management of the school's affairs except when they are actually sitting as members of the board. They will learn about liability of districts, of employees, and of board members.

In short, this reference will be of tremendous value to board members, for whom it is designed. School board attorneys and school administrators will find the book invaluable. It will make an excellent text in college education classes, and should be placed in all college library and professional collections.

D. W. Tieszen
Central Missouri State College
Warrensburg, Missouri

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